S. HRG. 101-879

PLANS, PROGRESS, AND EXPERIENCE TO DATE OF THE DEFENSE NUCLEAR FACILITIES SAFETY BOARD

HEARINGS

BEFORE THE

SUBCOMMITTEE ON
STRATEGIC FORCES AND NUCLEAR DETERRENCE

OF THE

COMMITTEE ON ARMED SERVICES
UNITED STATES SENATE

ONE HUNDRED FIRST CONGRESS

SECOND SESSION

MARCH 28, 1990

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PLANS, PROGRESS, AND EXPERIENCE TO DATE OF THE DEFENSE NUCLEAR FACILITIES SAFETY BOARD

WEDNESDAY, MARCH 28, 1990

U.S. SENATE,
SUBCOMMITTEE ON STRATEGIC FORCES
AND NUCLEAR DETERRENCE,
COMMITTEE ON ARMED SERVICES,
Washington, DC.

The subcommittee met, pursuant to notice, at 2:30 p.m., in room SR-222, Russell Senate Office Building, Senator J. James Exon presiding.

Committee members present: Senators Exon, Levin, Glenn, Thurmond, and Gorton.

Committee staff member present: Madelyn R. Creedon, counsel.

Professional staff member present: William E. Hoehn, Jr.

Minority staff members present: George W. Lauffer, and John E. Mansfield, professional staff members.

Staff assistants present: Barbara Gallo, Cindy Pearson, and Mickie Jan Wise.

Committee members' assistants present: Andrew W. Johnson, assistant to Senator Exon; Kenneth N. Luongo, assistant to Senator Levin; Christopher E. Paine, assistant to Senator Kennedy; Jefferson B. Seabright, assistant to Senator Wirth; and Robert M. Soofer, assistant to Senator Gorton.

OPENING STATEMENT OF SENATOR J. JAMES EXON, CHAIRMAN

Senator EXON. The subcommittee will please come to order. The Subcommittee on Strategic Forces and Nuclear Deterrence meets today to hear testimony from the Defense Nuclear Facilities Safety Board. The subcommittee is very pleased to have the five members of the Board here: Mr. Conway, Chairman, Mr. Eggenberger, Vice Chairman, and members Mr. Case, Mr. Crawford, and Dr. Kouts. Welcome to each one of you.

The Board was created by this committee in legislation to provide independent oversight of the Department of Energy nuclear facilities and to ensure the public health and public safety in the nuclear facilities and to assure that these were not endangered in any way by operation of these facilities.

I suggest hindsight has indicated that we should have moved in this area a long time before we did. I just want to add also that when we started developing this concept, not even in our fondest hopes were we looking forward to being able to attract the quality

of the people that have been nominated and confirmed to this position. Your duties and responsibilities in carrying out this task are substantial, and we appreciate very much the vigor with which you have undertaken your mission.

The Board must review and evaluate the standards relating to design, construction, operation, and decommissioning of defense nuclear facilities of the Department of Energy; investigate any event or practice at Department of Energy nuclear facilities that adversely affects or may adversely affect public health and safety; analyze design and operational data; review the design of new facilities such as the new production reactors on which the Department of Energy is currently working; and make recommendations to the Secretary of Energy.

As this committee has previously stated, the Board was established as an independent safety oversight body to assure and to enhance the safety of operations of the Department of Energy nuclear facilities and to restore public confidence that these facilities can be operated without undue risk to the public. The Board can and should be instrumental in restoring public confidence in the Department's management capability. While the Board is currently in its infancy having begun operation just this past October the members have many years of experience in nuclear safety and in nuclear facilities management and operation. The subcommittee is confident that the Board, as constituted, can provide critical expertise, technical vigor, and a sense of vigilance within the Department at all levels.

Because this subcommittee was instrumental in creating the Board, the Board's ability effectively to oversee the activities of the Department of Energy nuclear facilities and to provide strong, independent, well-reasoned recommendations is critical to us as well as the public. To say that the Board has a big job ahead is something of an understatement. However, we feel very fortunate that you five respected experts have agreed to take on this task.

The purpose of our meeting today is to receive a report on the Board's early operations and to learn of the Board's plans for the coming year, which will see several critical facilities in restart conditions such as Rocky Flats, the K, L, and P reactors at Savannah River, and the Purex facility at Hanford.

The Board has submitted a statement, and without objection, I would ask that the Board's full statement be made a part of the record at this time.

And now before we go to the testimony, I would like to call upon my distinguished colleague who has been working hand in glove with the Chairman and the other members of the committee in not only establishing this Board, but who has a keen interest in how we help you move ahead. And with that I am pleased to recognize my wonderful friend and colleague, Senator Thurmond.

Senator THURMOND. Thank you very much, Mr. Chairman, for those kinds words. Mr. Chairman, I am pleased to welcome the members of the Defense Nuclear Facilities Safety Board, along with you, to this their first hearing since their confirmation. I was very impressed with their qualifications and commitment during their confirmation hearings, and I am eager to hear today the progress they have made.

Mr. Chairman, I particularly hope they will address three areas of concern to me, and I think of general concern. First, I am concerned that the Board will not be able to function in the manner that Congress intended if their deliberations must be conducted in public so that their every recommendation to the Secretary of Energy will be known to the anti-nuclear activists and the press before the Secretary has had a chance to even see them. Of course, without question, their recommendations should be made public, but let the Board make them public after receipt by the Secretary, as provided by statute.

Second, I understand that the Board currently does not have the same flexibility in hiring technical experts as other Government organizations, such as the Nuclear Regulatory Commission, involved in the safety of nuclear facilities. I hope the witnesses will tell us why the Board needs to have this authority.

Third, I am appalled that the United States has come to the point where we are unable to manufacture any nuclear weapons at all. Can the safety problem at Rocky Flats possibly be so bad that we are going to unilaterally disarm ourselves? We have relied on the nuclear deterrent for 40 years. We need nuclear weapons. We need to go into the START era with a completely modernized strategic force. Now we find out that Department of Energy will be unable to provide warheads for the third Trident submarine. So, I hope the Board will tell us whether or not they believe Rocky Flats needs to be shut down for safety reasons.

Mr. Chairman, never before have we relied on the Department of Energy as much as we do now. However, its operations must be carried out safely and responsibly. The Defense Nuclear Facilities Safety Board is a key player in ensuring the safe operations of our Nation's nuclear complex. I believe the members of the Board are prepared for the challenge, and I look forward to their testimony. Thank you, Mr. Chairman.

Senator EXON. Senator Thurmond, thank you very much. We are going to move to the testimony now, and I understand you, Mr. Conway, will be testifying. For those of us who hear testimony all the time, I think this is a very significant development that I would like to state for the record. Never before have we had a group of five people who can agree on one to be a spokesman for the whole Board. This indicates to me there is a high chance of success for your mission. [Laughter.]

I do want to say we will hear your testimony at this time and then we will have questions. I would just like to invite any of the other four members to speak up at any time on any subject that they see fit because we do want all of your input, and thank you all for being here. Please proceed, Mr. Conway, in any fashion you see fit.

STATEMENT OF JOHN T. CONWAY, CHAIRMAN, DEFENSE NUCLEAR FACILITIES SAFETY BOARD, ACCOMPANIED BY ANDREW JON EGGENBERGER, VICE CHAIRMAN, DEFENSE NUCLEAR FACILITIES SAFETY BOARD, EDSON G. CASE, MEMBER, DEFENSE NUCLEAR FACILITIES SAFETY BOARD, JOHN W. CRAWFORD, JR., MEMBER, DEFENSE NUCLEAR FACILITIES SAFETY BOARD, AND DR. HERBERT KOUTS, MEMBER, DEFENSE NUCLEAR FACILITIES SAFETY BOARD

Mr. CONWAY. Thank you, Mr. Chairman. I first want to thank you and Senator Thurmond on behalf of my colleagues for the kind remarks you have made this afternoon. As you mentioned, this is our first appearance before your committee since our confirmation hearings. Having worked with my associates for 5 months now, I can assure you that they will not be hesitant in speaking out their own mind as we proceed through the hearing this afternoon.

I am pleased, sir, if you will take our prepared written testimony as presented to you and as submitted to you a day or so ago for the record.

Senator EXON. We have accepted that, and we are pleased to do that.

Mr. CONWAY. Yes and thank you, sir. At the time of the preparation of the written version of our testimony, the Board had issued two sets of recommendations to the Secretary of Energy, both of which were affixed to our prepared statement. Since then—actually since yesterday—the Board has issued a third set of recommendations to the Secretary concerning the safety of the single shell waste tanks at the Hanford site. A copy of the letter containing those recommendations was sent yesterday to the committee.

The Board proposed—and has proposed a surveillance program—for the tanks in question providing advance information on conditions indicating a possible explosion hazard, and I would request if you would be kind enough, Mr. Chairman, to add that set of recommendations to our prepared statement, which we have submitted.

Senator EXON. Without objection, that is so ordered.

Mr. CONWAY. Senator Thurmond asked us to comment on three points, if I may, and the first one as to how our Board operates and if we will be required to make our testimony or our recommendations to the public before we present them to the Secretary. We think this will be a problem. We are, in fact, in a court of law now on that point. We have been sued by two organizations that have demanded that we have all of our meetings open to the public as we prepare our recommendations.

The law as written and which gives us the authority to do our work requires us to submit to the Secretary of Energy our recommendations and thereafter make them promptly available to the public. Not only that, there are occasions that the law has recognized that if it is a severe problem, that we are required then to not only advise the Secretary of Energy but bring it to the President of the United States and thereafter make it public. The law is very specific on those points and to comply with the law, we do send our recommendations first to the Secretary and then make them promptly public.

If we have to have our hearings open as we prepared our recommendations, which we do as a group, then we cannot comply with the law that gives us our authority, and so that is a matter of law as we see it, and the argument is now in the courts of law.

The other point which we think is very, very essential to us, and we have made it in our prepared statement, and that is the ability to hire competent technical personnel. The Atomic Energy Act in section 161(d) which also is the compelling law for our authority—in the Atomic Energy Act the NRC has the authority to hire technical personnel outside of so-called Title V. We were under the impression that we would have that same authority. However, it is apparently not so.

We must get permission—first off, we must describe each position before we hire an individual. Those position guides must be approved by the Office of Personnel and Management, and at that time and only then are we prepared or are we authorized to hire personnel. We find in our experience dealing with OPM that most of the rules and regulations as to levels of salary—and I am talking within the 18 levels of salary—their guides are such that it is most dependent upon how many people you manage.

Now, we do not want to build a big empire. What we are looking for are competent individuals, technical individuals who have special knowledge and experience in the nuclear field. These are not to be managers of large numbers of personnel. They are there to look into specific problems as we do our work.

It was recognized for the NRC that this is the type of personnel they would need, and they have what is known as the ability to hire under the excepted provision of section 161(d). We are looking for the same type of individuals that the NRC hires, and we would ask Congress to give us the same authority in hiring technical personnel that the NRC currently has.

Those are two key points that I would like to make as far as our Board is concerned.

With regard to Rocky Flats and the importance of that facility, we have selected Rocky Flats and Savannah River as top priorities in the work we are doing. The Department of Energy has so indicated it is a high priority, and the Secretary has so designated it is a high priority. And, accordingly, we are giving it the highest priority also, and we are devoting a great deal of our attention to both Rocky Flats and Savannah River as priority issues.

And with that I would throw it open for any questions you might have, Mr. Chairman, and also for any comments that my associates might wish to make.

[The prepared joint statement of the Defense Nuclear Facilities Safety Board follows:]

PREPARED STATEMENT OF JOHN T. CONWAY, CHAIRMAN, DEFENSE NUCLEAR FACILITIES SAFETY BOARD, ACCOMPANIED BY A.J. EGGENBERGER, VICE CHAIRMAN; EDSON G. CASE, MEMBER; JOHN W. CRAWFORD, JR., MEMBER; AND HERBERT KOUTS, MEMBER

Mr. Chairman and members of the subcommittee:

We appreciate the opportunity to appear before you to review the activities of the Defense Nuclear Facilities Safety Board (Board).

PROGRAM OVERVIEW

The Board has been in operation for about 4 months; we were sworn into office on October 25, 1989. At an early stage, we began to review selected Department of Energy (DOE) defense nuclear facilities that DOE considers to be urgent in light of its mission, primarily the Savannah River Reactors, the Rocky Flats Plant, and the Waste Isolation Pilot Plant. Our priorities also included evaluation of a potential waste storage safety problem at the Hanford Site.

At the same time, the Board had to address numerous administrative requirements and obstacles attendant to the formation of a new Federal establishment.

SAVANNAH RIVER SITE (SRS)

The Board began its independent oversight at the Savannah River Site by an initial visit and by the subsequent follow on use of specialist teams led by individual Board Members. We are continuing to review the Savannah River situation.

The Board will avoid interfering with DOE's program to manage the Savannah River Site or any other facility under its jurisdiction to the extent possible consistent with carrying out our responsibilities with respect to public health and safety. Thus, the Board intends to continue providing recommendations to the Secretary of Energy resulting from independent review of site activities that could have an impact on public health and safety.

As of today, the Board has made two sets of recommendations to the Secretary pursuant to the requirements of Chapter 21 of the Atomic Energy Act, and is awaiting the Secretary's response. On February 22, 1990, we transmitted our first set of recommendations to the Secretary of Energy concerning the training of reactor plant operators and supervisors at the Savannah River Site. On March 8, we submitted another set of recommendations respecting safety standards. We have included copies of the above recommendations as an attachment to our testimony, as well as a copy of our first annual report covering the activities of the Board through January 1990.

ROCKY FLATS PLANT

The Board made two visits to the Rocky Flats Plant. We have gained first-hand knowledge of the functions of the Plant, its condition, the manner in which operations are being carried out, and problems relative to assuring adequate public health and safety. During these visits, the Board met with Federal and State legislators, the Governor of Colorado and members of his staff, various citizen groups, labor union officials, and had meetings with local DOE and contractor officials. We made ourselves available to the local press. We strove to acquire a broad perspective on the issues associated with the Rocky Flats operation. In our review of activities at this facility, we are being assisted by some of the experts referred to previously.

WASTE ISOLATION PILOT PLANT (WIPP)

The Board made an initial familiarization visit to the WIPP Facility in January. During this visit, presentations were made by senior DOE and contractor personnel relating to the history of the project and the current issues facing DOE management including the numerous experiments for characterizing the expected performance of the facility.

The Board plans to arrange several follow-up trips to WIPP by technical review teams. We plan to schedule these visits and be in a position to make any necessary recommendations within the time frame the WIPP will be ready to receive waste for the test-phase operation of the facility.

HANFORD SITE

Three members of the Board visited the Hanford Site in December 1989. The visit concentrated on the cleanup activities under way, the activity being conducted in preparation for the restart of operations at the Purex Plant, the work being conducted toward dry standby status of the N-Reactor, and the work in the Plutonium Finishing Plant.

The Board is reviewing a potential safety matter that has been brought to our attention. This concerns the possibility that existing storage tanks at the site for high level waste from fuel reprocessing might be subject to chemical explosions that could lead to the dispersal of radioactive material. Analysis has been made in the past by DOE's Hanford contractor to establish its position that the possibility of such an explosion is very low. This question was discussed in some detail during our

visit, and the Board has been provided with the documents containing this analysis and the conclusions that had been drawn. The Board has retained the services of several expert consultants to perform an independent review of the analysis and conclusions in the DOE contractor's report, and to advise the Board on their technical findings.

MANAGEMENT ACTIVITIES

The Board is confronted with pressing administrative problems that directly impinge on our programmatic mission. The primary problems involve personnel and office space.

The Board and the Secretary of Energy agreed at the outset that the Board, an independent establishment, should not be quartered in facilities of the Department of Energy. The General Services Administration (GSA) initially informed us that it was not able to obtain any space for us. For lack of space, it was necessary for the Board to operate temporarily out of two rooms in the basement of the Forrestal building during our first 3 months of operations. We have since been furnished temporary Government quarters, and hope to have sufficient, permanent office space to house the employees of the Board by early summer 1990.

STAFFING ISSUES

The Board is faced with the task of locating and hiring qualified technical and support personnel. We have an acute need for qualified senior individuals who are well-grounded in one or more technical fields. The highly technical nature of our work coupled with a short supply of available talent results in the Board competing with other Government agencies and with private industry for individuals possessing the prerequisite experience and skill levels. We have found that our enabling legislation does not provide us with the hiring flexibility that other competing agencies, such as the U.S. Nuclear Regulatory Commission, possess. Thus, we are at a severe disadvantage in our recruiting efforts.

The seriousness of our need to obtain the services of well-qualified persons cannot be overstated. The Board believes that the key to carrying out our mandate rests on our ability to build a highly competent staff capability that enables us to reach sound judgments in a reasonable time frame.

SUMMARY

To summarize, our first 4 months of operations have provided the Board with the challenging and complex task of selecting both the DOE sites and the safety issues on which we should concentrate our early reviews and evaluations. Due to the urgency and sensitivity of the issues, the Board quickly initiated review activities at the four sites previously discussed in our testimony, and intends to continue to pursue the discharge of our statutory responsibilities at these and other DOE defense nuclear facilities while we continue to address the many managerial issues associated with the start-up of any new agency.

Thank you for the opportunity to report to you on the Board's progress in meeting the challenges before us. We will be happy to answer any questions you may have.

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

John T. Conway, Chairman
A.J. Eggenberger, Vice Chairman
Edson G. Case
John W. Crawford, Jr.
Herbert John Cecil Kouts

February 22, 1990

Honorable James D. Watkins
Secretary of Energy
Washington, DC 20585

Dear Mr. Secretary:

On February 22, 1990, the Defense Nuclear Facilities Safety Board met and in accordance with Section 312(5) of Public Law 100-456 approved a number of recommendations which I am sending you enclosed for your consideration.

Section 315(A) of Public Law 100-456 requires the Board, after receipt by you, to promptly make these recommendations available to the public in the Department of Energy's regional public reading rooms. Please arrange to have these recommendations placed on file in your regional public reading rooms as soon as possible.

The Board will publish these recommendations in the Federal Register.

Sincerely,

John T. Conway
Chairman

Enclosure

HAND DELIVERED

RECOMMENDATION TO THE SECRETARY OF ENERGY
pursuant to Section 312(5) of the
Atomic Energy Act of 1954, as amended.

Dated: February 22, 1990

The Board has proceeded to give high-priority attention to the contemplated restart of the K, L, and P reactors at the Department's Savannah River site. This is in line with the intention of the Board to perform its duties on a schedule compatible with the Department's defense missions, to the extent such course is consistent with the Board's statutory responsibilities.

The Board believes that the DOE standards for training of reactor plant operators and supervisors at Savannah River have not been adequately determined and specified. Having given due regard to the technical and economic feasibility of implementation in accordance with the statute, the Board recommends:

a. That DOE determine and specify the qualifications that reactor plant operators and supervisors will be required to demonstrate before restart of the K, L, and P reactors;

b. That DOE identify any differences between its approved qualifications and those prescribed by NRC for analogous positions in the civilian nuclear power field; that where differences, if any, exist, DOE identify any supplemental measures that have been adopted in view thereof;

c. That DOE make a comprehensive review of the current level of qualifications of each reactor operator and supervisor employing both written and oral examinations, so as to establish that the scope and content of the training program will achieve the knowledge prerequisite for restart;

d. That the reactor plant operator and supervisor training programs be modified as necessary to take account of the required qualifications and the current state of knowledge and experience of the operators and supervisors as indicated in c. above;

e. That DOE accelerate implementation of a configuration management program to help assure that as-built drawings of safety-related systems are available for training of operators and supervisors in procedures and for discipline of operations (e.g. valve line-ups); and

f. That the operators and supervisors be qualified in use of the revised procedures that will be in place for normal operations and for emergency situations.

John T. Conway, Chairman

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

John T. Conway, Chairman
A.J. Eggenberger, Vice Chairman
Edson G. Case
John W. Crawford, Jr.
Herbert John Cecil Kouts

HAND DELIVERED

March 8, 1990

Honorable James D. Watkins
Secretary of Energy
Washington, DC 20585

Dear Mr. Secretary:

On March 8, 1990, the Defense Nuclear Facilities Safety Board, in accordance with Section 312(5) of Public Law 100-456, approved a number of recommendations which are enclosed for your consideration.

Section 315(A) of Public Law 100-456 requires the Board, after receipt by you, to promptly make these recommendations available to the public in the Department of Energy's regional public reading rooms. Please arrange to have these recommendations placed on file in your regional public reading rooms as soon as possible.

The Board will publish these recommendations in the Federal Register.

Sincerely,

John T. Conway
Chairman

Enclosure

RECOMMENDATION TO THE SECRETARY OF ENERGY
pursuant to Section 312(5) of the
Atomic Energy Act of 1954, as amended.

Dated: March 8, 1990

As required by the Atomic Energy Act, the Defense Nuclear Facilities Safety Board has begun a review and evaluation of the content and implementation of standards relating to the design, construction, operation and decommissioning of defense nuclear facilities of the Department of Energy (DOE). In its initial phases, the Board has concentrated its efforts on evaluating the adequacy of DOE Orders and Draft DOE Orders as they apply to health and safety aspects of defense nuclear activities at the Savannah River Site and associated Orders which have been issued by DOE's Savannah River Operations Office. To date, the Board's review has preliminarily addressed the content of these Orders. The review has not yet extended to implementation. Also, the Board is not certain that it has seen all applicable DOE standards as they apply to health and safety at the Savannah River Site.

The results of the Board's review to date indicate a large degree of variability in the level of detail specified by such Orders and, in general, a level of specificity much less than is found in Nuclear Regulatory Commission requirements applied to commercial nuclear facilities. The Board has found further that there is a lack of uniformity among such Orders as to whether they are mandatory, non-mandatory, or referenced for information. In addition, the review also has disclosed that a number of DOE Orders embodying safety requirements are in draft form, with substantial uncertainty as to when or in what form they will be issued.

In view of the foregoing and other information relating to DOE Orders provided by the Department, the Board recommends the following:

- That the Department identify the specific standards which it considers apply to the design, construction, operation and decommissioning of defense nuclear facilities of the Department of Energy (including all applicable Department Orders, regulations, and requirements) at the following defense nuclear facilities as follows:

  -- Savannah River Site: K, L, and P Reactors

  -- Rocky Flats Plant: Buildings 371, 374, 559, 707, 771, 774, 776, 777 and 779

-- Hanford Site: Plutonium Finishing Plant; Purex Facility, together with associated waste processing and storage facilities; N-Reactor (including decommissioning); and K-Reactor Storage Basins

-- Waste Isolation Pilot Plant.

o That the Department provide its views on the adequacy of the standards identified in the above process for protecting public health and safety at the defense nuclear facilities referred to, and determine the extent to which the standards have been implemented at these facilities.

We believe it is necessary for the Department eventually to accomplish the above for each defense nuclear facility under its jurisdiction. The facilities enumerated in these recommendations are those which the Board understands to be among those which have high priority within the Department and on which the Board has focused its attention.

John T. Conway

John T. Conway, Chairman

Section 316.(a) of the Atomic Energy Act of 1954 as amended requires that an annual report by the Defense Nuclear Facilities Safety Board be submitted to Congress at the time of the President's budget message to Congress. Although the Board has been in existence for only 96 days, it has concluded that an initial report containing an account of its activities to date might be welcomed by the Congress.

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ACTIVITIES OF THE DEFENSE NUCLEAR FACILITIES SAFETY BOARD
A REPORT TO THE CONGRESS

Introduction

PL 100-456 amended the Atomic Energy Act of 1954 as amended, to add a new Chapter 21 establishing the Defense Nuclear Facilities Safety Board. The Board is composed of 5 members appointed by the President with the advice and consent of the Senate.

On August 4, 1989, the President submitted to the Senate the following nominations to the Board:

John T. Conway of New York
A. J. Eggenberger of Montana
Edson G. Case of Maryland
John W. Crawford, Jr. of Maryland
Herbert J. C. Kouts of New York

Hearings were held by the Armed Services Committee of the Senate on October 17, 1989, and subsequent to the Committee's favorable report the Senate on October 18, 1989 consented to the nominations. Oaths of office were administered to the Board members on October 25, 1989.

The following is a report by the Board as to its activities during the period since its members were sworn in.

Administrative Activities:

The first three pressing administrative problems facing any new organization are financing, staff, and office location. Ordinarily, these matters would not be covered in the Board's report. However, the last two have been especially vexing during the Board's early days.

Financing:

Sec. 1442 of PL 100-456 (the enabling legislation dated September 29, 1988) provided for the transfer of funds from the Department of Energy to the Board in an amount not to exceed $7,000,000 for its operation in fiscal year 1989. Of this amount, $2,000,000 was available in carryover funds at the time the Board came into existence in FY 1990. By PL 101-101, the Congress appropriated $7,000,000 for the Board for FY 1990. These sums less Gramm-Rudman-Hollings restrictions total $8,865,000, which is available to the Board for operation during FY 1990.

Staff:
The Board is authorized by law to

(1) hire such staff as it considers necessary to perform the functions of the Board, but not more than the equivalent of 100 full-time employees; and

(2) procure the temporary and intermittent services of experts and consultants to the extent authorized by section 3109(b) of title 5, United States Code, at rates the Board determines to be reasonable.

In addition, the Board is authorized to use employees of other government agencies with the consent of the heads of the other agencies. Under the latter authority, the Board promptly requested assistance from the Federal Energy Regulatory Commission (FERC), an independent agency. FERC has been most helpful by assigning to the Board for a period up to 120 days, three of its personnel with specialized administrative experience. The Board also requested and received assistance from the Department of Interior in assigning to the Board a technically qualified employee for a period not to exceed 6 months beginning January 29, 1990.

The Board's need for competent technical employees is acute considering the scope of its statutory functions and the large number of facilities under its purview, and a number of technically qualified persons have been interviewed for permanent staff positions. The Board wants to ensure that rigorous attention is given to identification and consideration of details bearing on public health and safety aspects of DOE's defense nuclear facilities. Despite urgent need for technical staff, it was agreed at the outset with the Secretary of Energy that the Board would be sensitive to incursion into the ranks of the Department's technical personnel. An ultimate loss rather than gain in the overall national interest might well result from depletion of the talents available to the Department.

The Office of Personnel Management has been helpful in connection with the recruitment effort. However, the OPM has advised that the Board is not statutorily exempt from the requirements of Title 5 of the United States Code governing appointment of employees and classification of employee positions in the competitive service. In other words, the Board does not have flexibility such as, for instance, does the Nuclear Regulatory Commission, which possesses the authority pursuant to Section 161.d of the Atomic Energy Act of 1954 as amended, to employ persons without regard to a number of otherwise applicable requirements if it deems such action necessary to the discharge of its responsibilities.

Despite difficulty in obtaining permanent technical staff, the Board has been fortunate in engaging the services of several highly competent people in an independent contractor relationship. These are noted in the descriptions below of activities the Board has initiated in connection with individual

DOE facilities. In addition, the assistance of the MITRE Corporation has been enlisted by contract. The MITRE program is discussed in more detail below.

On December 20, 1989, the Board met with Admiral Kenneth Carr, Chairman of the Nuclear Regulatory Commission and members of his staff, to explore areas in which the NRC might assist the Board in its work. It was agreed that the Board in implementing required Federal Drug Plans (including Employee Assistance measures) could avail itself of the NRC program on a reimbursable basis. It was also agreed that NRC would explore the possibility of the Board's using NRC procurement assistance.

On December 1, 1989, the Board held a meeting with officials of the General Accounting Office to discuss a number of reviews and investigations conducted by the GAO of defense nuclear facilities. Among those in attendance were Mr. J. Dexter Peach, Assistant Comptroller General, Mr. Keith O. Fultz, Director of Planning and Reporting and former Director for Energy Issues, and Mr. Victor S. Rezendes, the current Director for Energy Issues. The GAO officials were generous of their time and were most cooperative in helping the Board focus on important issues with which it will be dealing.

About the same time, representatives of the National Science Foundation advised that their Agency would be pleased to assist the Board in procurement matters.

Office Location:

The Board and the Secretary of Energy agreed at the outset that the Board, as an independent establishment, should not be quartered in facilities of the Department of Energy. However, for lack of other adequate government space, it has been necessary for the Board during its organizational period to operate temporarily out of two rooms in the basement area of the Forrestal Building, while seeking another location in proximity to DOE headquarters.

The General Services Administration (GSA) at first advised that no government facilities would be available to meet the Board's needs for at least six months. Subsequently, and with the direct intervention of the Administrator and his Deputy, GSA has located temporary office space which is expected to be available early in February 1990. Permanent quarters are expected to be available sometime later in the year. At one point, the GSA attempted to negotiate a lease for permanent office space for the Board in the Comptroller of the Currency Building, close to DOE headquarters. However, the Post Office Department exercised an earlier option for the space under a need to expand from its nearby new Post Office Building.

Facilities under Board Cognizance:

Discussions are underway with the Department of Energy concerning facilities over which the Board has oversight responsibility. Completion of identification of these sites continues to be a high priority of the Board. DOE sites that

have generated the major concerns, principally the Savannah River Site, the Rocky Flats Plant, and the Waste Isolation Pilot Plant, are currently assigned top priority, in that order. Other production and utilization facilities operated for national defense purposes are also easily identifiable. However, some facilities involve defense activities in part. For instance, the uranium enrichment facilities now in operation are used in part to supply product to the Naval Nuclear Propulsion Program (but are not covered by Executive Order No. 12344, referred to in Sec. 318(1)(A) of the Atomic Energy Act.

Then there are nuclear facilities that were used for defense purposes in the past, but are now dormant except for pending cleanup, or whose use now is such as to raise a question as to whether they are encompassed by the definition of defense nuclear facilities in Sec. 318 of the Act. Outstanding examples are the Athabasca facility in Missouri and the uranium isotope enrichment plants not now in use.

Questions regarding the Board's jurisdiction can also be raised in regard to such facilities as those at the Nevada Test Site that are unrelated to testing of nuclear weapons (e.g. a temporary storage facility for TRU waste from Lawrence Livermore Laboratory, destined eventually for the WIPP facility, and facilities at the Pantex site that may not be related to assembly of nuclear weapons). The Board will use its best judgment to determine precisely which facilities it will oversee.

Within the brief period of its existence, the Board has not been able to conduct the study called for by Sec. 320.(2)(c) of PL 100-456. That study will be carried through during the coming year, and the results will be included in the next annual report provided in conformance with the legislation.

Activities Related to Facilities of DOE:

Savannah River.

The Board has initiated its independent external oversight activities at the Savannah River Site (SRS), starting with a site visit on November 7-9, 1989. Activities at the site are continuing, with an emphasis on reactor restart programs. Three follow-up visits to SRS have been made by specialist teams selected and led by Board members. The Board's current review activities emphasize DOE Orders and standards, organizational and management procedures and concepts, safety evaluation reports, quality assurance, operator training, pre-start-up testing, probabilistic risk assessment, seismic engineering, thermal-hydraulics, integrity of piping and vessels, non-destructive examination and testing, configuration control, and conduct of operations. The Savannah River Site is regarded by the Board as among its highest priority assignments.

The Board has acquired the assistance of several expert consultants to supplement its capabilities in a number of key areas. At the present time these areas and the consultants are:

Seismic Engineering. - DOE's SRS contractor has undertaken

an extensive program in seismic engineering, some of which is to be completed before restart of the reactors. This includes retrofit and upgrade of certain reactor facilities and components important to safety, to render them adequately resistant to earthquakes. This is to be followed by a long-term retrofit program for these safety-related components.

Expert consultants who are assisting the Board in review of seismic activities include:

-H and H Consultants, Inc. (Dr. William J. Hall, principal investigator)

-Paul C. Rizzo Associates, Inc. (Dr. Paul C. Rizzo, principal investigator)

-Stevenson & Associates (Dr. John D. Stevenson, principal investigator).

Thermal-Hydraulics. - A study by a Committee of the National Research Council of the National Academy of Engineering has established the need for an improved understanding of thermal-hydraulic aspects of performance of emergency cooling systems of Savannah River Reactors. Analysis to determine the power levels at which the reactors can operate safely depends critically on this understanding. The SRS contractor has initiated an extensive program of experiments and analytical development to clear up the questions that have been identified. The following expert consultants are assisting the Board in its review of these activities:

-Brookhaven National Laboratory (Dr. Uphendra Rohatgi, principal investigator)

-Dr. Long-Sun Tong

Integrity of Piping and Vessels. - The vessels and the accessible primary stainless steel piping of the Savannah River Reactors are undergoing extensive non-destructive examination, to determine their freedom from cracks or other defects that could threaten sustained capability for cooling of the reactors. At present the Board is being assisted in its review of this activity by Dr. John Weeks, of the Brookhaven National Laboratory. Additional consultants should soon join Dr. Weeks in this task.

Training and Qualification. - In the Board's view, one of the most important activities under way at the Savannah River Site is the retraining and qualification of reactor operators and plant operators. The Board is following this program and evaluating it. Assistance is being provided by System Planning Corporation, with John F. Drain as the principal investigator.

Standards. - The activity of the MITRE Corporation, discussed below, is presently focused on the Savannah River Site.

Rocky Flats Plant.

Another high priority facility receiving Board attention is the Rocky Flats Plant. While plans had been made to visit this site in early December, it was deemed prudent to postpone the

visit so as not to complicate reviews and assessments being carried out by a cadre of DOE officials and inspectors, including a visit by the Secretary of Energy following the change of operating contractors.

The Board made its first visit to the Rocky Flats Plant during the week of January 15, 1990. The purpose was to gain knowledge at first hand of the features of the Plant, of its condition, of the manner in which operations are being carried out, and of such problems potentially affecting public health and safety as might be thought to exist. It was recognized that this visit would help identify areas on which the Board should concentrate early reviews and evaluations.

During its visit, the Board met with Governor Roemer of Colorado, Congressman Skaggs, representatives of citizen organizations with concerns about the environment and weapons proliferation, and a group of labor union officials representing workers at the Rocky Flats Plant.

Based on its visit, briefings by DOE staff, and reviews of documents, the Board has identified several areas, including the following, as requiring early further evaluation by the Board from the standpoint of public health and safety:

- Training and qualification of operating personnel.
- Discipline in operations, including matters such as use of procedures, availability of up-to-date drawings, and identification of systems and components.
- Compliance with DOE Orders and standards.
- Adequacy and completeness of work being undertaken prior to resumption of operations in plutonium facilities.
- Scope and influence of engineering in activities leading to resumption of operations and to modification of facilities.
- Seismic protection.
- Probabilistic risk assessments.

As is being done in connection with restart of Savannah River reactors, the Board expects to use highly qualified consultants to assist it in these evaluations.

Waste Isolation Pilot Plant (WIPP).

The Board made an initial familiarization visit to the WIPP Facility on January 15-16, 1990. During the visit, presentations were made by senior Westinghouse and Department of Energy personnel, relating the history of the Project and the current issues facing Project management. The Board also toured the Waste Handling Building and the underground areas including those being used in numerous experiments for characterizing the Facility.

The Board plans to schedule a number of follow-up visits by teams including expert consultants and staff. The schedules for these are to be so developed that subsequent Board actions should have no unnecessary impact on the readiness of WIPP to receive waste for the test phase of operation of the Facility.

Hanford Site.

Three members of the Board visited the Hanford Site on December 11-13, 1989. The presentations by the Department of Energy personnel of the Richland Operations Office and the Westinghouse contractor for the site were concentrated on the cleanup activities under way, the activity being conducted in preparation for the restart of operations at the Purex Plant, the work being conducted toward dry standby status of the N-Reactor, and the work in the Plutonium Finishing Plant.

In its visit to Hanford, the Board was especially interested in reviewing a safety matter that had initially been brought to its attention by Senator John Glenn. This concerned the possibility that existing storage tanks at the site for high level waste from fuel reprocessing might be subject to chemical explosions. Analysis has been made in the past by DOE's Hanford contractor, to establish their position that the possibility of such an explosion is very low. This question was discussed in some detail during the visit, and the Board has requested and has subsequently been provided with the documents containing this analysis and the conclusions that had been drawn. Steps have been taken by the Board toward an independent review of the analysis and the conclusions.

Review of Standards.

The Board is required to review and evaluate the content and implementation of the Department of Energy standards related to the design, construction, operation, and decommissioning of DOE defense nuclear facilities (including all applicable DOE Orders, regulations, and requirements at each of the DOE defense nuclear facilities.) Recognizing the importance and urgency of accomplishing this extensive review and evaluation, the Board has already initiated the tasks involved and has engaged the assistance of the MITRE Corporation in this activity. A plan has been developed which identifies the areas in which standards are to be examined, describes the scope of the effort involved, and organizes the work in phases, together with associated schedule, milestones, and resource requirements. A framework for assessment is being developed under which reference standards are being assembled, and criteria for determining their adequacy developed.

The assessment activity is beginning at the Savannah River Site, and is to be continued at other DOE facilities consistent with the priorities established by the Board. An important aspect of this standards assessment will be a comparative evaluation between nuclear and other standards used by the DOE for safety purposes and those which are used in the licensing and regulation of commercial nuclear power reactors.

John T. Conway, Chairman

A. J. Eggenberger, Vice Chairman

Edson C. Case

John W. Crawford

Herbert J. C. Kouts

JOHN T. CONWAY

John T. Conway, an engineer and attorney, is Chairman of the Defense Nuclear Facilities Safety Board. His nuclear experience includes 12 years on the staff of the Joint Committee on Atomic Energy, U.S. Congress (six years as Staff Director), 11 years as President/Chairman of the Board of the American Nuclear Energy Council, and eight years as Chairman of the Con Edison Indian Point Nuclear Facilities Safety Committee. Following is a brief resume:

Oct. 1989 - Present	Chairman, Defense Nuclear Facilities Safety Board
1982 - 1989	Consolidated Edison Company, Executive Vice President
1982 - 1989	American Nuclear Energy Council (ANEC) Chairman
1978 - 1982	American Nuclear Energy Council (ANEC) President
1968 - 1978	Consolidated Edison Company, Executive Assistant to Charles F. Luce, Chairman of the Board (1970-78, duties included Chairman, Nuclear Facilities Safety Committee)
1956 - 1968	U.S. Congress - Staff, Joint Committee on Atomic Energy (1958-62, Assistant Staff Director; 1962-68, Executive Director)
1950 - 1956	FBI, Department of Justice, Special Agent - served in Kentucky, New York, Washington, D.C.
1949 - 1950	Meighan & Necarlsomer Law Firm, Associate

Education	Columbia University School of Law, LLB, 1949 (converted to Juris Doctor, 1969)
	Tufts University, BS Engineering, 1947
Military Service	U.S. Navy, active duty February 4, 1943 to September 1946; Saw service in North Atlantic, USPC781, Discharged Lt. (j.g.)
Professional Memberships	Admitted to New York Bar, 1949, and Supreme Court of the United States, 1953

A. J. EGGENBERGER

An expert in nuclear safety and earthquake engineering, A. J. Eggenberger was nominated by President George Bush in August 1989 to be Vice Chairman of the newly established Defense Nuclear Facilities Safety Board.

Prior to assuming his new office, Eggenberger was a senior official at the National Science Foundation serving as Program Director and Leader of the President's Earthquake Hazard Mitigation Program. In addition to his significant contribution at the Foundation, the Department of Energy recognized Eggenberger's broad experience and knowledge by selecting him to be a member of the Committee on Seismic Isolation for the New Production Reactor Program and as a member of the Board of Governors for the Seismic Technology Program.

Eggenberger's expertise in the area of nuclear technology was acknowledged by the international community when officials of the International Atomic Energy Agency in Vienna, Austria, requested him to serve as an expert consultant with the Division of Nuclear Safety. For the past five years until he assumed his new position, Eggenberger was able to share his considerable knowledge, providing expert services to the Agency and its member states on nuclear safety issues related to the siting and construction of nuclear facilities.

Until joining the National Science Foundation in 1984, Eggenberger was an Associate Partner with D'Appolonia Consulting Engineers in Pittsburgh, Pennsylvania, where he was directly in charge of the Nuclear Facilities Group. Under his direct management, this Group dealt with engineering issues ranging from mining, milling, fabrication, reprocessing, to disposal of units in the U.S. and abroad. Eggenberger also has extensive participation in Naval Reactors prototype programs.

Early in his career (1967 to 1972), Eggenberger was a Professor and Researcher at the University of South Carolina in Columbia.

Eggenberger graduated with a Bachelor of Science from Carnegie Mellon University in 1961. He earned a Master of Science from The Ohio State University in 1963, followed by a Doctor of Philosophy in 1967 from Carnegie Mellon University.

Following confirmation by the United States Senate, A. J. Eggenberger's was sworn in as Vice Chairman of the Defense Nuclear Facilities Safety Board, effective Octrober 19, 1989.

January 1990

EDSON CASE

During his military and civilian careers, Edson Case has been in the forefront of the development and implementation of nuclear safety policy.

Case graduated from the United States Naval Academy in 1946 as an Ensign and spent the next 15 years as a Naval Officer. For several years during the 1950's, Case worked directly for Admiral Hyman Rickover as a Project Officer in the Naval Nuclear Propulsion program.

In his 30-year civilian career, Case was a senior staff member of the U.S. Atomic Energy Commission and the Nuclear Regulatory Commission (NRC). For over 10 years at the NRC, he was Deputy Director and Director of the Office of Nuclear Reactor Regulation, responsible for all safety aspects of commerical nculear power plants, including their location, design, construction, and operation.

Case retired from the NRC in 1985, and until recently provided consulting services to the Commission. In August 1989, President George Bush nominated Edson Case to be a Member of the newly established Defense Nuclear Facilities Safety Board. In his appearance before the Senate Committee on Armed Services, Case stated his belief in timely decisionmaking, firm yet fair decisions, and his strong support of a competent technical staff. Following confirmmation by the United States Senate, Case was sworn-in as a Member of the Board in October 1989.

Case received degrees from the United States Naval Academy and the Massachusetts Institute of Technology. In 1982, he received the Meritorious Executive Award in the Senior Executive Service.

Case and his wife, Rita, have six grown children.

January 1990

JOHN W. CRAWFORD, JR.

Jack Crawford has spent almost his entire working career in the applications of military and civilian nuclear technology. Prior to being sworn in as a Member of the Defense Nuclear Facilities Safety Board, he was an Independent Technical Consultant under the Trust Agreement for the cleanup of the Three Mile Island nuclear power plant.

He began his Naval career during World War II serving in USS YORKTOWN, USS SANTEE, and USS BROOKLYN. Following duty as Submarine Repair Superintendent at the Philadelphia Naval Shipyard, Crawford served in various assignments with the Atomic Energy Commission (AEC) in the area of naval reactors. His responsibilities included providing guidance and direction to ensure that required safety, quality and reliability standards were incorporated in the planning and construction of naval nuclear power plants. He served under Admiral Rickover as Deputy Manager of Naval Reactors.

Following retirement from the United States Navy with the rank of Captain, Crawford returned to the Atomic Energy Commission (subsequently the Department of Energy) to begin a career in civilian nuclear technology. He held increasingly responsible positions culminating in being appointed Principal Deputy Assistant Secretary for Nuclear Energy. As Principal Deputy he carried out a comprehensive "post-TMI" assessment of the safety of DOE nuclear reactors, the widely publicized "Crawford Report." He retired from the Department of Energy in 1981.

After graduation from Tilton School, Crawford attended Norwich University, graduated with distinction from the United States Naval Academy in the class of 1942, and earned two Masters Degrees from the Massachusetts Institute of Technology (Naval Construction and Engineering, 1946, and Physics, 1950). He completed the curriculum at the Federal Executive Institute in 1968.

Selected by President George Bush and confirmed by the United States Senate to serve as a Member of the Defense Nuclear Facilities Safety Board, Crawford brings to this position comprehensive knowledge and experience in the engineering and construction of nuclear reactors and almost forty years of government service.

Married to the former Elizabeth F. Edwards, Crawford and his wife have three grown children and reside in Maryland.

January 1990

HERBERT KOUTS

BIOGRAPHICAL INFORMATION

EMPLOYMENT HISTORY

1989-Present — Defense Nuclear Facilities Safety Board, Washington, DC

Board Member

1976-1989 — Brookhaven National Laboratory, Upton, New York

1976-1978	Head, International Safeguards Project Office
1977-1988	Chairman, Department of Nuclear Energy
1988-1989	Senior Physicist, Department of Nuclear Energy

1975-1976 — United States Nuclear Regulatory Commission, Washington, DC

Director, Office of Nuclear Regulatory Research

1973-1975 — United States Atomic Energy Commission, Washington, DC

Director, Division of Reactor Safety Research

1950-1973 — Brookhaven National Laboratory, Upton, New York

1950-1952	Head, Reactor Shielding Group
1952-1968	Head, Experimental Reactor Physics Group
1968-1973	Head, Technical Support Organization (Think Tank for DOE in nuclear materials safeguards)

EDUCATION

B.S. Mathematics, 1941, Louisiana State University
M.S. Physics, 1946, Louisiana State University
Ph.D. Physics, 1952, Princeton University

MEMBERSHIPS

American Nuclear Society
National Academy of Engineering
International Nuclear Safety Advisory Group (INSAG)
New York Academy of Sciences

AWARDS

E.O. Lawrence Award, 1963
Atomic Energy Commission's Distinguished Service Award, 1975
Nuclear Regulatory Commission's Distinguished Service Award, 1976
ANS Nuclear Reactor Safety Division's Tommy Thompson Award, 1983

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

John T. Conway, Chairman
A.J. Eggenberger, Vice Chairman
Edson G. Case
John W. Crawford, Jr.
Herbert John Cecil Kouts

HAND DELIVERED

March 27, 1990

Honorable James D. Watkins
Secretary of Energy
Washington, DC 20585

Dear Mr. Secretary:

On March 27, 1990, the Defense Nuclear Facilities Safety Board, in accordance with Section 312(5) of Public Law 100-456, approved a number of recommendations which are enclosed for your consideration.

Section 315(A) of Public Law 100-456 requires the Board, after receipt by you, to promptly make these recommendations available to the public in the Department of Energy's regional public reading rooms. Please arrange to have these recommendations placed on file in your regional public reading rooms as soon as possible.

The Board will publish these recommendations in the Federal Register.

Sincerely,

John T. Conway

John T. Conway
Chairman

Enclosure

RECOMMENDATION TO THE SECRETARY OF ENERGY
pursuant to Section 312(5) of the
Atomic Energy Act of 1954, as amended.

Dated: March 27, 1990

During the visit of members of the Defense Nuclear Facilities Safety Board to the Hanford site on December 11-12, 1989, one of the topics discussed was the question of the susceptibility of the old single shell high level waste tanks to an explosion of a spontaneous nature, with resulting release of large amounts of radioactive material to the environment. This potential problem had been brought to the attention of the Board during its confirmation hearing. The Board members received a briefing on the subject during their visit and they were later furnished additional relevant documents.

The Board subsequently obtained the assistance of three highly qualified experts, who visited the Hanford site on March 20-21, 1990, to explore questions that had surfaced through its earlier reviews. The experts developed information on the chemical contents of the tanks and the implications for the possibility of a spontaneous explosive reaction. The experts have now made their preliminary oral report to the Board.

As a result of these activities, the Board concludes that the probability of an explosion in the old single shell waste tanks is low. All evidence available indicates that the conditions that might have contributed to a higher probability of such an explosion were more prevalent in the past than they are now, and these conditions are continuing to lessen as time passes. The principal factor contributing to this moderating of conditions is the reduction of the radiation field in the tanks through radioactive decay of their active contents. This serves to lower both the rate of ionization of the components of the waste and the heat source that might elevate the temperature.

However, the Board does have some residual concerns resulting from the uncertainty of information on the details of composition of the contents of these tanks, the physical conditions within them, and the recent information concerning high levels of hydrogen in some of the double-walled waste tanks. These concerns prompt the Board to recommend the following for future programs for monitoring the single shell tanks:

- That a study be undertaken of the possible chemical reactions that could be the source of heat generation locally or globally in the single shell tanks, thereby elevating the temperature to a value where explosive ferrocyanide reactions can take place rapidly.

• That the Department of Energy develop a program for continuous monitoring of those conditions in the single shell tanks that can serve to indicate development of conditions indicating an onset of instability in their contents. These conditions might include such features as abnormal temperatures in local areas, physical deformation of the surface of the waste, or unusual components (including hydrogen) in the cover gas within the tanks.

• That the instruments used in monitoring the tanks be provided with alarm indicators at a location where decisions can be made and action taken to start a series of measures to neutralize a perceived abnormality.

• That an action plan be developed for the measures to be taken to neutralize the conditions that may be signaled by alarms.

The Board considers the matter of hydrogen generation in the double walled tanks to be potentially more serious than questions related to the single shell tanks, and is pursuing it separately.

John T. Conway, Chairman

Senator EXON. Mr. Conway, thank you very much. I just returned from a luncheon with the Secretary of Defense in his office at the Pentagon, and we discussed a whole range of matters that has to do with the national security interest of the United States with attention of course on the peace dividend and the budget cuts that are going to have to be made, and we talked about all areas of the budget. I know the Secretary is very much concerned about increasing our understanding of our nuclear facilities, returning them to safe operation and the confidence that must be built into that. And once again, I thank you on behalf of all of us for the job that you are doing in that regard.

What involvement will the Board have with the restart of the Savannah River reactors? You are taking a look at the safety matters there. Is it correct to say that you will be playing an important watchdog role in that area? Is it safe to say that those reactors will not be started until the Board has indicated that in your judgment the safety problems have been cured? Or, put another way, how far is the Board prepared to go in the specific concerns that have surrounded the Savannah River facility since it was closed down?

Mr. CONWAY. All right, sir. Well, if you may recall, at our confirmation hearings we did identify Savannah River as one of the top priorities that was assigned by the Secretary of Energy to his people, and so we have continued to designate Savannah River as one of our highest priorities and have allocated substantial attention to it, as well as Rocky Flats for that matter.

Now, at both sites we have identified several key areas that warrant our attention prior to start-up, and we have employed a number of experts to assist us in our evaluations. It is our intention to continue to focus on these specific areas at both sites, both Rocky Flats and Savannah River, and we will make whatever rec-

ommendations we believe are necessary to ensure adequate protection of the public health and safety.

As we proceed in our evaluations, we may add to our areas of review if we believe it to be necessary. We have informed the Secretary of Energy that we intend to the fullest extent consistent with our statutory charter to perform our duties in a manner compatible with the relative priority or urgency the Secretary attaches to the facility subject to our oversight.

Now, we believe that the decision to start up or resume operation at a facility is the duty and prerogative of the Secretary. Should he make this type of decision under conditions that we believe pose an undue risk to the health and safety of the public, we would be prepared to make recommendations based on our concerns including—and I will stress this—including a recommendation that he rescind or revise his decision, but we will continue to follow this very, very closely, and we have in our annual report to this committee specified those areas that we think are important and warrant our special attention, and we will continue to do that, sir.

Senator EXON. Thank you. Let me pose some other questions in this area. Recently a lawsuit was filed against the Board by the Natural Resources Defense Council and the Energy Research Foundation for the Board's alleged failure to comply with the provisions of the Freedom of Information Act and the Government in the Sunshine Act. Recognizing, of course, that this is a matter that is presently before the courts and as your ability to comment on the suit is limited, could you, though, describe what impact, if any, these two statutes would have and the effect that they would have on the Board if the court should determine that the statutes are applicable to your Board?

Mr. CONWAY. Yes. First, if I may, I would like to point out that neither of the two organizations ever asked to meet with us or ever asked for any piece of information from us prior to their suit. We have met with every group and every individual that have asked to meet with us. In fact, when we have been out at the sites that we have visited, we have spent time with different organizations, public interest groups, and individuals, but the two organizations that have brought suit against us at no time ever asked to meet with us, nor had they asked for our data until yesterday or the day before yesterday after the suit had been joined and just before we entered—the afternoon before we had to appear before the judge where we were then hit with a Freedom of Information letter.

Now, getting back to the question how would we operate, I can tell you emphatically we in no way could have proceeded as we have and as fast as we have and gotten these three sets of recommendations out as we have done had we been—and I will use the word very, very carefully—burdened by the so-called Sunshine Act.

As we see the law, the act as passed by Congress specified that the members of our Board had to be recognized experts in the field of nuclear safety. We look upon that as a requirement for each of us to work in our area and bring our expertise to bear, and we meet daily and more than once per day as we review the papers, as we discuss among ourselves with our own experiences and expertise of where we think we have to move and what areas we should focus on.

If, as we develop our recommendations—and, as I say, we are required by law to submit those recommendations to the Secretary before we make them public—we would not be able to work as a collegial group preparing and working on our recommendations. We would have to get staff to do that work, and it would be the staff that would be doing the preparing of the documents, and we would not be able to meet except by putting out a notice, and I think it is a week in advance of any meeting we hold. We would have to explain what the agenda and place that—in the advance notice what our agenda would be, and then we would meet like five judges, a judicial group, and listen to staff or someone else present their opinion and recommendations to us, and then make our decisions.

We now are doing the work, and we are working on a daily basis as a team. As my associate says, we are working as a team. No more than two of us at any one time could ever meet and discuss something without it being a violation of the Sunshine Act.

Now, if it becomes the law, whether because of judicial decision or by congressional enactment, we would not be able to operate the way we currently are operating and/or would we be able to, in my opinion, comport with Public Law 100-456, which requires us to make our recommendations first to the Secretary.

Senator EXON. Thank you, Mr. Conway. My time is up.

I would like to ask at this time that you submit for the record a list of all public groups and individuals with whom you have met in addition to those you just mentioned. I will have other questions on a second round, but I am pleased to recognize at this time Senator Thurmond.

[The information referred to follows:]

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

PUBLIC MEETINGS

Date: January 17, 1990

Location: Boulder, CO

Attendees:

Mike Davidson, United Steelworkers of America
Ray Malito, United Steelworkers of America
Dennis M. Cole, Pipefitters Local 208
Carolyn Balls, Congressman David E. Skagg's Office
Ron Green, IBEW Local 68 (Electricians)
Tom Oldfield, Pipefitters Local 208
Bruce E. Earnheart, Painter and Finishers Local 79
Ervin Krueger, Colorado Bldg. and Const. Trades
Melinda Kassen, Environmental Defense Fund
Carolyn Bninski, Rocky Mountain Peace Center
Harvey Nichols, Dept. of EPO Biology, University of Colorado
Adrienne Anderson, National Toxics Campaign
Niels Schonbech, Dept. Chemistry, Metropolitan State Collete
Jason Salzman, Greenpeace
Tom Rauch, American Friends Service Committee
Laura Lefkowits, Physicians for Social Responsibility
Joe Tempel, Rocky Flats Alliance/Cleanup Commission

Date: February 27-29, 1990

Location: Boulder, CO

Attendees:

Paula Elofson-Gardine, Director, Concerned Health Technicians for a Cleaner Colorado
Kim Grice, Chairman, Committee Against Radiotoxic Pollution
Greg Marsh, Citizens Against Rocky Flats Contamination
LeRoy Moore, University of Colorado and Rocky Mountain Peace Ctr.
Dr. Nicholas Helburn, Professor Emeritus of Geography, University of Colorado
Dr. Gregory Colvin
Cathleen Sullivan, Chairperson, Rocky Mountain Peace Center
Joe Temple, Rocky Flats Clean-up Commission
Jason Salzman, Greenpeace
Jim Morris
Robert McClintock, Colorado Public Research
Carolyn Benenski, Rocky Mountain Peace Center
Paul Casey, Rocky Mountain Peace Center
Charles Calloway
Dr. and Mrs. Michael March
Barbara More
Gale Biggs

Date: February 28, 1990

Location: Boulder, CO

Attendees:

Samuel Williams, Colorado State Representative and Rocky Flats Environmental Monitoring Council Chairman
Dave Minshel, Channel 7 News
The Daily Camera

Date: February 29, 1990

Location: Boulder, CO

Attendees:

Rocky Flats Environmental Monitoring Council, Health Committee:

Howard Brown, Executive Director
Dr. Thomas Vernon, Chairman, Health Committee
Dr. Tom Looby, Assistant Director for Health and Environmental Protection
Dr. John Bagby

Date: March 8, 1990

Location: Washington, DC

Attendees:

Shira Flax, Sierra Club
Anne Ehrlich, Sierra Club

Senator THURMOND. Thank you, Mr. Chairman. Mr. Conway, sometime ago indications were found that plutonium had collected in the duct work of Buildings 771 and 776 at Rocky Flats. Was there ever a danger of a criticality accident, and was there any release of plutonium from the plant?

Mr. CONWAY. On the basis of the evidence we have collected to date, we have seen no evidence that a criticality explosion could have occurred. Included in that evidence and data that we have reviewed is a very detailed study that was done under the auspices of the National Academy of Science, and that looked into that matter in great detail and its conclusion at the time similarly was that there was no evidence, no evidence that such a criticality explosion might have occurred at the time. But it is something that needs to be carefully watched, obviously.

Senator THURMOND. Mr. Conway, the Secretary of Energy also has an advisory committee on nuclear facilities safety reporting to him. Will you please clarify the relation of this advisory committee to your Board?

Mr. CONWAY. Yes, sir. That particular advisory committee is characterized or normally described as the Ahearne Committee. Dr. Ahearne is the chairman of that committee. The members of that committee are appointed by the Secretary. He appoints the committee and he designates to them what specifically he wishes

them to look into, and they make their recommendations, directly to the Secretary, obviously.

The difference between the so-called Ahearne Committee and our Board is that our Board is completely independent of the Department of Energy. We are not selected or appointed by the Secretary. We are not paid by the Secretary for our expenses. We are a creature, if you will, of Congress.

We were established, we were put into being as an independent establishment, and we also are full-time members of the Board. We work solely and exclusively as members of this Board.

The other committee is a part-time committee. It comes and meets periodically and, as I say, their membership is appointed by the Secretary. I must say, however, they are very qualified individuals. We have the highest respect and regard for the individual members on that committee.

Senator THURMOND. Captain Crawford, I believe, you have an enormous body of experience with the Navy and with the old AEC. In those days the AEC was able to attract and keep wonderful, talented people. Has the Department of Energy been able to keep people of this caliber, and will safety depend upon finding and keeping such people?

Mr. CRAWFORD. They have not, sir, not in the degree and the numbers needed, and this is a situation which has existed for some time. A main cause—and I do not say it is the principal cause—is that when the Department of Energy was formed, as the successor agency to the Energy Research and Development Administration, they were not allowed to keep that very important provision of the Atomic Energy Act which permitted them to hire people of technical and technical/managerial competence that are essential to conducting nuclear affairs safely.

Admiral Rickover, for whom I worked with over many years, used to say that nuclear power is not something on which we can impose our standards with respect to people. It has attributes of its own which it imposes on all who would use it.

The Atomic Energy Commission was given authority by an enlightened Congress full and complete powers to hire the type of technical competence that it needed. I saw that capability brought to bear under Admiral Rickover's expert attention to building a nuclear navy of a very high order of technical capability.

Later, when some of us were called to try to revise and upgrade the civilian reactor program of the Atomic Energy Commission, that same prerogative to hire technical competence was invoked to build up a very strong technical organization. It was lost to the Department of Energy because of the circumstances I have described, and the Department of Energy in my personal view, notwithstanding repeated warnings of the need to acquire technical and managerial competence without which one cannot conduct effective and safe nuclear operations has not yet succeeded in acquiring that authority. That is the authority that we are requesting for our Board today and without which we cannot succeed.

Senator THURMOND. Captain Crawford, in your visits to the Savannah River site, did you find any safety issues that might hold up the restart of the production reactors?

Mr. CRAWFORD. Well, there are some potential areas. There is one area that potentially might hold up start-up, and it relates to the training and the capabilities and qualifications of the operators down there. This was a problem identified many years ago, I might say, but it was focused on by the Board.

Immediately, one of the first things we did—in the first visit to Savannah River—was focus on this problem. We retained a group of expert consultants, thoroughly knowledgeable and accomplished in knowing the requirements of training and the attributes for safe operation, and we came out with a set of recommendations that has been given to the Secretary. In subsequent visits down there we have noted some improvement, and, as I should tell you, after this session is over I am going to leave for Savannah River to meet with the same experts to whom I referred, and we are going to see what further progress has been made.

There is no reason why, in my view, why it need be a hold-up; but you asked whether it could be. Yes, there is a potential for hold-up there.

Senator THURMOND. Thank you, Mr. Chairman.

Senator EXON. Thank you, Senator Thurmond. Senator Glenn.

Senator GLENN. Thank you, Mr. Chairman. I have an opening statement I would like to be included in the record.

Senator EXON. Without objection, so ordered.

Senator GLENN. I will summarize it very briefly. Here it was the intent of the legislation which I introduced that within carrying out that legislation that all the different aspects of public access laws, the right to this and that that apply to everybody else would be observed here, and with one very good reason.

It was not done just to be nasty. It was done because of one of the problems that you are all aware that we got into through the years. Everything with regard to the nuclear weapons complex had been secret. We got into all of this waste problem because it was easier to put it in that pit out behind the plant and not say anything about it for a while. Now is after a while, and we have to deal with it, and that is the reason we are into some of the mess that we are in.

So, it was the intent that all these laws that apply across the board be complied with, and NRC complies with them and Department of Energy's advisory committee for nuclear facilities safety seems to be able to comply with them.

Do they short-cut? Are you trying to do things they do not do? Why is it any more difficult here? We do not seem to be having any problem in some of these other places that originally predicted a lot of problem and do not seem to be having it or nobody has filed suit against them. Maybe that is the difference at the moment. Is it more difficult in your situation than it is in theirs?

Mr. CONWAY. Senator, we can comply with them, and we will if that is what the determination is, is that Congress intended us to do this to the letter. We cannot do it the way the law currently is written where we are required as a Board to make recommendations to the Secretary. And, as we make these recommendations, we have to work among ourselves as a collegial group.

Now, we are going to make those recommendations first to the Secretary and if necessary to the President if they are important

enough and then promptly thereafter as the law requires it make it public, we are going to do that.

We are sensitive also on information. If there is a request for any information that is available to us, assuming that it is not in any way classified or we are prohibited from making it public, we will make it available. We plan to do that.

But I can assure you, we could neither operate the way we currently are operating nor could we as quickly do the paperwork that we are currently doing because of the procedural requirements that would be put upon each and every individual member. But we can do it if required.

Senator GLENN. This was not supposed to hold up operations. We are certainly not trying to do that.

Mr. CONWAY. I can assure you, Senator, that if we follow the letter of the so-called Sunshine Act, I will assure you it will delay us in doing the work we have been doing to date and making the recommendations that we have been making and we anticipate making more in the future.

Senator GLENN. What I think we probably should do is have the staff get together with you and talk about specifics on this, where it is holding things up, and compare it with the NRC and with the other agencies and see how things are being done differently. And then I hope that we could pull this together.

Mr. CONWAY. As I said, no request was made of us for any information. Had we been requested of any information, we would have made it available if we have data. And if it is not classified, we have no problem with doing it.

But we do have a problem if we are going to comply with the law, Public Law 100-456, under which we are instructed and mandated to do certain things. We will have a problem there if we have to hold all our hearings in the public, and make and work out our recommendations in the public a week in advance and not hold any meetings unless we put out a notice, an agenda of exactly what we are going to discuss, as for example, working on the recommendations we have gotten to date. We have done some of our work on the spur of the moment when information was brought to our attention. We are able to move fast. We are able to go out as a Board and visit these sites and make decisions amongst ourselves collegially. We will not be able to do that if we have to follow the letter of the law under the so-called Sunshine Act.

Senator GLENN. Well, once you make that collegial decision on the spot, do you announce it?

Mr. CONWAY. No, sir. What we do under the law is we prepare recommendations. The only authority this Board has—all our investigations, all of our reviews are for one purpose only, and that is under the law to make recommendations to the Secretary of Energy and thereafter promptly make them available to the public, and that is exactly what we are doing. The Secretary does not have to follow what we say.

Mr. CASE. That means, Senator, that within a day or less after we inform the Secretary, everything is made public.

Senator GLENN. We may want to follow-up on this later. There are some other areas I want to discuss now.

Mr. CRAWFORD. Senator, I would like to make a comment. We talked about delays in the Board's proceedings. The Board would be seriously delayed by lack of staff, which we have not been able really to acquire in light of the restraints imposed on us by the lack of the authority like the NRC has. We, the Board, are actually the people that go out and do the spade work and sometimes do so together. We would be essentially out of business, in my view, were we required to operate under the Sunshine Act today.

Mr. CONWAY. We go out onto the site. We go as a Board and on several occasions all five of us have been there. We ask questions. We hear the same information. We probe as a Board. We would not be able to have more than two of us meet at any one time without making prior announcements in advance by sending out specifically what the agenda would be. It would make us more as quasi-judicial as I see it as opposed to a working unit.

Senator GLENN. Obviously we are concerned about—and I do not want to belabor this because there are other things. We can talk about this privately or have a different meeting on it which will be open to the public. But as to whether—if you go out and are—our problem is this. In the past decisions were made and things were covered up that have gotten us into problems that are now going to cost maybe a couple of hundred billion dollars to get ironed out over a 20-year period, something like that, all because of secrecy.

Now, if you gentlemen go out and you are doing your job and you go out and you say, here is a lousy situation, this is flat out bad, and we have to do something about this, and you all agree on that, and that is the decision you are going to recommend to the Secretary and, boy, this is a bad one here, Mr. Secretary. And Mr. Secretary has some other concerns, and he says well, now, I know this is going to affront somebody over in the White House. There is going to be something, and we will sidetrack this a little bit, and I will just not do this for a little while yet here, and we cover this whole thing up and then it becomes a question of what time it is covered up and we are right back to where we were before.

You gentlemen were supposed to be, and I think are, the oversight group that says no matter what anybody else says, we are out there to protect the public, and here is something that looks bad. Now, what would prevent the Secretary from covering something up unless it becomes known?

Mr. CONWAY. He cannot, because take the situation you have just given me. We are required once we find out something is bad out there, we quickly identify that, and then we bring it to the attention of the Secretary. Under the law we make recommendations as to what he is going to do. The law requires us then to promptly make it public.

And how do we do that? The law specifies that subsequent to our making it available to the Secretary, making our recommendations available, we must promptly make it public by two ways: one, putting it in the Federal Register, which we have done, and two, requiring it to be put in every document room operated by the Department of Energy throughout the entire country.

Let me tell you what else we have done to date. I sent it to this committee. I sent a copy to the subcommittee, to the House Armed Services Committee, to your Government Operations Committee,

and to the individual members of Congress in whose area those particular facilities are sited. We did that the same day. But after we sent it to the Secretary, but promptly within the same date. Now, the Secretary is required by law to respond to us within 45 days. He has to respond in public. Thereafter we have the discretion of holding public hearings. We must make all our recommendations immediately available to the public, and that is exactly what we are doing. And so the public is going to get this information.

Now, what I am suggesting to you is, as we are preparing the recommendations, as we are visiting the site do we have to take the public along with us when we visit the site, as a group? As we are developing our recommendations do we have to make them available to the public before the President of the United States can get them or the Secretary of Energy can get them because we have to do this in front of anybody that wants to come in or demands to come in as we are working our positions? Our interpretation is that we must promptly make them public once we get them to the Secretary.

Senator GLENN. I have more questions, but my time has expired. Thank you.

[The prepared statement of Senator Glenn follows:]

PREPARED STATEMENT OF SENATOR JOHN GLENN

On April 23, 1987, I introduced legislation which created an outside nuclear safety board to oversee the safety of DOE's nuclear weapons production complex. A principal reason why this board was created was to provide a better form of public accountability in the critical area of nuclear safety. The Governmental Affairs Committee, which I chair, had several hearings which revealed how the DOE abused its powers of secrecy by allowing dangerous deterioration of several key facilities and an extraordinary lax system of safety oversight.

Eventually, the Congress enacted a scaled-down version of my proposal. Although I was not completely satisfied with the final outcome of this legislation, the Defense Nuclear Facilities Safety Board, in principal, represented a major and positive departure from past practices.

While the Congress authorized creation of the Safety Board in the fall of 1988, it took another year to select, nominate, and approve the members of this important Federal agency. The Safety Board has been functioning for about 6 months now, and unfortunately is mired in controversy over the very issue which helped spawn its creation. I speak of secrecy.

It has come to my attention that the Safety Board is now being sued in Federal court for failing to abide by the Sunshine Act or the public records provisions of the Freedom of Information Act. I understand that the Safety Board has taken the position that it is not subject to these important provisions and thus does not have to hold open meetings, provide public notification, and access to the Board's deliberations.

As the author of the original Safety Board legislation, I must point out that it was my intent for this agency to operate in an open fashion with full compliance with these public access laws with appropriate exceptions when classified information is dealt with. The failure of the Safety Board to comply with these laws and to take the position that it is not required to do so, violates the very spirit by which this Board was created.

Specifically, according to the Senate Report by the Armed Services Committee regarding the creation of the Board:

"The basic goals in establishing an independent safety oversight board are to assure and enhance the safety of operations of DOE's nuclear facilities and to restore public confidence. . . . Above all, the Board must have a primary mission to identify the nature and consequences of any significant potential threats to public health and safety, to elevate such issues to the highest levels of authority, *and to inform the public.*" (emphasis added)

What's really at issue here is the absolute need to restore public confidence and to keep the public informed. While I am sure that the intentions of the Safety Board to conduct its business in a closed manner are honorable, they may nonetheless serve to undermine public credibility in the Board's operations.

I strongly urge that the Board settle this matter by adhering to the Sunshine Act and the Freedom of Information Act. The DOE's Advisory Committee on Nuclear Facility Safety, which supplements the work of the Safety Board, has been exemplary in its efforts to provide public access and compliance with Federal open government laws. Despite my initial skepticism about the DOE's Advisory Committee, I have found it to be effective. Moreover the Advisory Committee's compliance with open government laws has not interfered with its functions. Perhaps the Safety Board can learn from their example.

The Safety Board faces several important challenges during this critical period when the U.S. Government wrestles with the difficult and costly modernization and clean up of DOE facilities. They include:

—the restart of DOE's crippled production reactors at the Savannah River Plant. This effort will require certification by the Safety Board that DOE's technological, scientific, personnel, and training capabilities are adequately upgraded in time to meet projected tritium shortfalls.

—the growing deterioration of DOE's plutonium processing facilities. Making sure that the Rocky Flats plutonium foundry can safely operate while developing a new and safer method of plutonium processing capability is another top priority.

—the safe and effective management of DOE nuclear and mixed wastes and the pressing need for environmental restoration have raised a new set of safety concerns.

In particular, I continue to be concerned about the potential risks of explosions in DOE's high-level nuclear waste tanks. As you know, the DOE has announced that there exists a risk of hydrogen explosions in the double shell tanks at the Hanford operation. In 1985, DOE was warned about this problem by Battelle Pacific Northwest Laboratories (PNL). Moreover, in this 1985 report, PNL warned that the wastes in these tanks are also generating other explosive gases such as methane, carbon monoxide, and ammonia.

This situation is a classic example of how nuclear waste management problems were not considered important enough to warrant the attention of DOE and contractor management. Now we face uncertainties about the risks of waste tank explosions to the point where DOE is fearful of even placing explosive gas measurement instruments inside these tanks at Hanford. The tragic accident at Khyshtym in the Soviet Union where a high-level nuclear waste tank exploded demonstrates that this is not an abstract issue. The explosion released an estimated 2 million curies of long-lived radioactive wastes to the atmosphere.

I intend to carefully follow this and other issues which the Safety Board is supposed to cover. I thank the Safety Board members for appearing and look forward to your testimony.

DOE NEWS

FOR IMMEDIATE RELEASE
March 23, 1990

STUDIES FOCUS ON HYDROGEN GAS IN NUCLEAR WASTE STORAGE TANKS

A new study by Westinghouse Hanford Company (WHC) scientists has raised concerns about the potential consequences of hydrogen buildup in some of the underground nuclear waste storage tanks at Hanford.

Hydrogen, if allowed to reach sufficient concentrations, can ignite or explode. Hydrogen comes from organic wastes which were introduced into the tanks in the 1970s. As these wastes decompose, they generate hydrogen, nitrous oxides, and nitrogen. The combination of the other gases with hydrogen increases the risk.

At present, there is not enough evidence to accurately determine the risk of an explosion inside the tank. Experience over the past decade of continuously monitoring and measuring the tank's contents would suggest the risk is low.

Existing safety analyses on hydrogen buildup in waste tanks, show that the energy level in an hydrogen accident would be insufficient to break through the tank. A tank contains 1.5 feet of reinforced concrete and steel that is covered by 6-8 feet of soil. The report is being reviewed and new analyses are being conducted to determine if the conclusions of the existing studies are still valid.

The wastes were generated by chemical separations processes in the 1960s, and moved to these tanks a decade later where they were mixed with other wastes.

Because the content of the tanks is a thick slurry, a crust forms, trapping the gases beneath it. This may cause the buildup of gas to reach the level at which it might ignite.

There is one double-shell tank, 101-SY, of particular concern to scientists because it is now nearly full. However, the problem exists to a lesser extent, in four other double-shell tanks and 15 single-shell tanks.

In an effort to reduce the gas buildup in 101-SY, scientists have injected water into the slurry and have lanced the crust with pipes to allow escape vents. These efforts, however, have not solved the problem and have been discontinued.

101-SY contains no known ignition source and precautions are being taken to assure maintenance and operations activity don't introduce any. The precautions include the following:

- o No transfers of waste in or out of the tank.
- o No core sampling inside the tank.
- o No maintenance work of any kind that would create heat or sparks near the tank.

In addition, Westinghouse scientists are seeking outside help from industry experts with experience in fire and explosion evaluation and prevention. An action plan is also being developed to determine the actual flammability hazard of the gases and to assess any potential serious consequences if the gases are ignited. Measures will also be identified to mitigate any unacceptable risks.

Historically, levels of the surface of the tank contents would rise as gasses expand and drop when the gases vent.

The slurry growth in the tanks was first recognized in April 1977, shortly after the tank was put into service. The cyclic growth and collapse of the waste surface, however, was not observed until March 1981. It has been closely monitored and measured ever since. The first release of gases from this activity was noted in July 1983. The gases are released through a system of filters where they can be monitored.

This potential problem came up as a result of collecting and analyzing data about the explosive potential of ferrocyanide in the single shell tanks. This review was prompted by concerns raised by the staff of Senator John Glenn. As a result of this review, Westinghouse scientists became concerned about the presence of gases such as hydrogen and began monitoring the content of the gases. Reviews by other independent scientists identified the potential for possible flammable or explosive mixtures of gas.

Westinghouse scientists and DOE officials expect to have a long-term action plan to identify solutions to the gas problem by June. A key feature of Research, Development, Demonstration and Testing plan for Waste Management and Environmental Restoration issued by the Department last summer is a long term program to characterize and safely dispose of all the waste in all of Hanford's tanks.

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Media Contact: Ken Morgan, 509-376-7501

RL-90-023

Senator EXON. Thank you, Senator Glenn. The Senator from Washington is recognized. We are very glad to have you here with us today, and I assume you will have some questions on that facility out in your State.

Senator GORTON. Well, I am going to ask some questions on that facility, but also some general ones first. I would ask, Mr. Conway, when you wrote the Secretary on March 8 you identified a lack of clearly defined standards in Department of Energy's orders related to the protection of public health and safety. In the absence of clear departmental standards, what criteria will your Board use to judge the safety of Department of Energy's defense nuclear operations?

Mr. CONWAY. Number one, the first of our functions is we are to do this job, reviewing all of these standards, and that includes orders and requirements, not only out of DOE headquarters, but at each individual facility. That is quite a job we have to undertake, and that is going to take us a long, long time to adequately do that. So set up priorities. One of them is at Hanford, but mostly at Rocky Flats and Savannah River.

But what we have asked them to do and what we will be doing is comparing those standards that DOE may have with the standards that the NRC has. Now, this has to do with, obviously, reactor operations. So, there is a yardstick there that we can compare.

In those areas where there are not reactors—such as production facilities—there we are going to have to use some judgments as to what standards we should judge them against based on our own experiences in the industries that we have been exposed to plus what are the normal requirements that industry uses itself in handling various types of work that may constitute or have certain risks involved with them.

Senator GORTON. Is there any reason you know of why defense nuclear facilities should not demonstrate the same level of safety required by civilian nuclear facilities?

Mr. CONWAY. Well, when you say the same, there may be because of different types of reactors or different operations, there may be some differences. But I think may be comparable would be the position I think we would look at.

But the answer is no. I think there should be at least a level that would assure that there is no danger to the public, undue risk at least to the public.

Senator GORTON. And so would it be fair to say that as a comparison that you may judge at least many of these standards against NRC standards and then evaluate the specific justification presented for any difference in approach on the part of the Department of Energy?

Mr. CONWAY. That would be the normal situation. We would look for the comparable standard in the industry itself.

Senator GORTON. I am interested in your view of the tanks at Hanford. I have both your direct testimony here and the slightly greater detail in your recommendation of yesterday to the Secretary of Energy on that. I would be happy to have you amplify on the problem to any significant degree that you wish to do so, but I suppose the bottom line question is, do you feel that the situation there is such that if there is reasonably prompt response to your recommendations to the Secretary that there is no undue safety hazard?

Mr. CONWAY. I think, Senator, two points I would like to make. The initial problem was brought to our attention during our confirmation hearing. Senator Glenn had a report that he felt was of some importance and brought it to our attention that there might be a problem with the single shell tanks at Hanford, particularly having to do with ferrous cyanide.

We then added that to our priorities, and we members of the Board did visit Hanford and specifically looked into that matter and specifically asked for documentation and data that support the position that then was being taken that there was no undue risk to the public. We brought in some experts to assist us. We did select three individuals we believe have a great deal of expertise in this field, and we asked them to review the data that had been collected on this matter, and they also went out and visited the site. Our recommendations that we submitted yesterday have to do with the single shell tanks.

However, in addition, they came upon what they thought may be a separate problem having to do with the double shell tanks. We met with the Department of Energy on this. We have reviewed with their key people. They are moving, they assured us, rapidly on that matter, and giving us adequate information in our opinion. We are arranging to again make an another visit to Hanford around the 10th of April. We will be visiting Hanford after they have had an opportunity to put certain things in motion which we think are necessary, and we will again be out there with our experts and again reviewing it.

The question is, are they taking adequate action? Their answer is yes, and we believe they are.

Senator GORTON. Thank you. And I may tell you that personally I am delighted at the way in which you have taken charge and undertaken your responsibilities in such a short period of time. Very few Boards start off the mark so well, while it is a very short period of time that you have been in existence. Do you believe at this point that the Department of Energy is taking your recommendations, not just on Hanford, but on all these issues, seriously?

Mr. CONWAY. The answer is yes. We have been informed by the Secretary and by his key people that they are taking them seriously, and we expect that they will be responding adequately to them.

Mr. CRAWFORD. In fact, in a memorandum with respect to the standards recommendation that we made in the general area to which you adverted, the Secretary, in a letter of instruction to his key deputies, told them that he agreed with our assessment of the situation completely. And, of course, that adds impetus to—it indicates his feelings with respect to their importance and their accuracy.

Senator GORTON. Thank you. Thank you, Mr. Chairman.

Senator EXON. Thank you, Senator Gorton. Mr. Conway, or any of your colleagues, what do you anticipate the Board's role will be in reviewing the new production reactor design process?

Mr. CONWAY. Well, I think the law requires us to do so, sir. Before construction commences we are mandated to review the design of that and follow it through before it goes into operation, and at such time as a decision is made to proceed with the new production reactor. As I read the law, we are required then to review the design and follow through during its construction and eventual operation.

Senator EXON. As I understand it, there is some design work going on and that has been going on for some time. Have you as a Board been consulted or advised on any of these activities to date in this area?

Mr. CONWAY. To date we have not, sir. On our orders of priority we have attended to the matters that I mentioned already, but the answer is no, sir, we have not.

Senator EXON. Is the Board planning to review the recently released Westinghouse study discussing the hydrogen gas buildup in waste storage tanks at Hanford?

Mr. CONWAY. Yes, sir. That is one of the matters that we are currently involved in.

Senator EXON. Can you say anything more on that at this time?

Mr. CONWAY. Well, other than the fact that we had our experts on March 20 and 21 visit Hanford. They participated in, and had a role in the evolution of that problem coming to the forefront. We have reviewed with the Department of Energy the work they are currently doing. We were preparing to be out there again on the 10th of next month to follow up on that.

Senator EXON. Has the Board held any public hearings yet to afford a forum for concerned citizens and private groups to express their safety concerns?

Mr. CONWAY. The Board at Rocky Flats had meetings with so-called citizen activist groups, with numerous individuals that came in on two different occasions. When we were at Rocky Flat we met with any and all of those that wanted to meet with us at the time. We also met with the press while we were out there and also when we were at Hanford.

My colleague reminds me that we met with the labor leaders at Rocky Flats, the president of the steelworkers union that represents the workers at Rocky Flats, plus the leadership of each and every one of the building trades that work at Rocky Flats. We did meet with them to elicit from them their concerns as to the safety of their workers, and we have had an open dialogue with them. We also met with the representative of the labor union at Hanford. He visited with us, and we also discussed with him his concerns.

Senator EXON. I take it, then, that the Board feels that as a part of its effort not only to make reviews, but to reassure the public that you are holding public meetings and discussions as opposed to closed meetings?

Mr. CONWAY. That is correct, sir. We have been willing to meet with each and every group that has asked to meet with us. My colleague reminds me we also met with the Governor's committee at Rocky Flats. I know of no individual and no organization that has asked to meet with us that we have not met with.

Senator EXON. Let me ask just one more follow-up question on this so I can get this on the record so that we have a clear understanding. Is there any prescribed procedure that the Board follows, let us say, that you are going to facility A, B, C, D, E, F, or G? By notice to either public or private officials or by public notice, do you indicate that you will be in such and such a place at such and such a time and will be available for consultation? Is that the way it works?

Mr. CONWAY. Each time we visited a specific site, we have given advance notice to the Department of Energy and specified the particular items we wished to discuss and review. Our first meeting at each one of these locations was basically to orient ourselves to the work being done there.

We have notified the legislative representative at the Federal and State level at each of those facilities that we were coming. We have notified in the case of Colorado the Governor because he has shown a particular interest that we were coming. We have informed organizations that we were coming and the legislative representatives from these areas that we would be available to meet with any groups or individuals that wanted to see us while we were at these locations.

Now, obviously when we visit the site, the sites are under the control of the Department of Energy. They are classified sites. We have to go through a procedure, a security procedure as we go through the site, including obviously meeting all of the radiological regulations at these sites. We do not take with us members of the public or groups representing the public when we visit the sites. But back at the hotels where we stay we let it be known who we are, what we are looking for, and anyone that has any information we encourage them to come to us.

Senator EXON. Well, let me follow up on that just a little bit. If you hold your meetings inside these facilities, then it is fair to say that not everybody would be able to walk into that meeting?

Mr. CONWAY. If you call them meetings—our inspections and reviews—when we are at these sites, we are looking for information and we are probing for answers. That is correct.

Senator EXON. I understand. But you said now back to the hotels. Is this on an informal basis? Do you sit down over a cup of coffee or do you actually hold a meeting where people can come in in a non-classified area and do you listen to their concerns and suggestions in public?

Mr. CONWAY. Specifically—and I will give you Rocky Flats as an example—we rent a room, a meeting room in the hotel where we are staying. We announce ahead of time that on such and such a date we will be there for anyone who wants to come to that meeting and it is open to the public. We had such a meeting at the Rocky Flats area where it was standing room only and each and every person that came there we gave them an opportunity to meet with us and discuss with us their concerns.

We also let it be known that if anyone wants to come and see us and for whatever reason does not want to do it in public, then we will meet with them in private if that is their wish. We have encouraged the labor leaders to come to us with any of the problems that they may have, and they have done that. We have also notified the press, both the written media and the T.V. media. We have made ourselves available to answer their questions.

Senator EXON. Thank you, Mr. Conway. My time is up. Senator Thurmond.

Senator THURMOND. Thank you very much, Mr. Chairman. Mr. Conway, you indicated in response to an earlier question that the Secretary of Energy has 45 days to respond to your recommendations. What recourse does the Board have if the Secretary does not accept your recommendations?

Mr. CONWAY. If the Secretary were not to accept our recommendations, we would review the reasons he justifies for not doing so. Then we have the opportunity of again reinforcing our recommendations to him. The decision whether to go or not go with our recommendations rests with the Secretary. We have no authority to have him comply with our recommendations. However, if we think there is an imminent threat to the public for not following through on our recommendations, then we can go directly to the President, as well as your committee.

Senator THURMOND. Mr. Conway, based upon the 4-month experience that you now have in dealing with the nuclear safety problem,

what do you anticipate will be the greatest hindrance to your work?

Mr. CONWAY. Well, I think—and I will let each of my colleagues also comment on that—if we are going to be required to follow the letter of the law of the so-called Sunshine Act, that will be a hindrance, a major hindrance. And the other equal if not greater will be our inability to hire good technical staff because of the current restrictions that we are under in our ability to hire people and meet since we do not have the same exceptions that the NRC has.

Mr. CRAWFORD. I would endorse that answer with one exception. I would place absolutely primacy on the imperative to get the same freedom with respect to hiring technically competent people as the NRC has because we just cannot operate, in my view, effectively in the manner that this committee intends and Congress intends we operate unless we get that exception.

Dr. KOUTS. I would reinforce what our chairman has said concerning the ability to meet and act together as a collegial group. This is absolutely necessary for the way we operate.

You have heard various statements made concerning the Hanford waste tanks and the hydrogen problem. This problem came to our attention on one day. We met on it the same day. We got the Department of Energy in to talk to us the next day. We got our consultants in, in between, and we made arrangements to go to Hanford again with an agenda established the next day. All like that. And this would be absolutely impossible if we had to publish notices of our meetings 2 weeks in advance or 1 week in advance with agendas stated.

We operate collegially. We work together collegially. We supplement each other's capabilities, and this is precisely the reason why, as we come here before you, our chairman can speak for us. It is because we have talked over these matters and we have arranged to have collegial points of view by this process.

Senator THURMOND. Mr. Conway, have you been able to review the safety of the new supercompacter at Rocky Flats?

Mr. CONWAY. That is one of the items we have looked at and will continue to look at. I have seen reference to the report by the GAO on this matter. But this is one of the items that we have under review at Rocky Flats, yes, sir.

Senator THURMOND. Mr. Conway, how will you know where to begin? You really have a full plate with the Savannah River restart, Purex, the new production reactor, and so forth. Purex is a particularly important case since other facilities are depending on Purex reopening on schedule. I am sure that the Governor of Washington, for instance, will want the Board to pass on Purex before it opens. Will you be able to do it on time?

Mr. CONWAY. One of the things we tried to do, Senator, is to set our agenda, set our priorities in concert with the Secretary of Energy. He has certain demands upon him that are placed upon him because of the needs of national security. We are not privy to all of that. And so, accordingly, as he sets priorities in the order in which he thinks he has to meet the national security needs, then we direct our efforts to ensure that the safety of the public is not being adversely affected. But we follow his lead as far as the orders of priority.

On the other hand, however, if an incident were to occur or something were brought to our attention indicating that could constitute an unreasonable risk to the public, then we have the authority and the right and the responsibility to move in that area, and we would be prepared to do so.

So, being specific in your question, we will review the Purex, in the time obviously, as the Secretary sees the need and the priority for that under the national security demand put upon him.

Senator THURMOND. One question for Dr. Kouts. You are one of the founders of the science of probabilistic risk assessment. Will you be able to apply this technique to the Department of Energy facilities, especially Savannah River and the new production reactor, and is this technique widely accepted enough by the public to allow decisions to be made on this basis?

Dr. KOUTS. Senator, the science of risk assessment is very widely accepted now, if not by the public, certainly by all people on the technical side of safety of nuclear facilities. It is being applied to Rocky Flats now. It is being applied to Savannah River now, and presumably could be applied to other facilities as well, Purex for instance, although I am not aware that it has been. It was applied to the N-reactor, prior to the N-reactor's shutdown. The science of risk assessment has been found to be an essential part of determining whether or not there are weaknesses in the protective measures that are taken for facilities, and every place where it can be used it is used and with great benefit.

Senator THURMOND. Thank you very much. My time is up, Mr. Chairman.

Senator EXON. Thank you, Senator Thurmond. Senator Glenn.

Senator GLENN. Thank you very much. I want to discuss staffing again. In your statement, Mr. Conway, you said we found that our enabling legislation does not provide us with the hiring flexibility that other competing agencies such as the NRC possess, and we are at a severe disadvantage in recruiting efforts. What did we goof on in that enabling legislation? How are you restricted from hiring people that NRC is trying to hire or you are trying to hire? Why are you restricted?

Mr. CONWAY. Well, basically we have to comply with the requirements of the civil service laws. Number one, to hire staff you have to have a job description. Now, we started with five members of a board without any staff. We were able to borrow, utilize the services and personnel of other government agencies on a loan to help us prepare to get staff.

Now, before we could hire staff and comply with the requirements of civil service—the OPM's requirements—we have to draft up a job description. In preparing the job description for a specific job, we have to get that job description classified and approved by OPM. Before they say okay, you have to tell them how many others that individual will be managing before you can set that grade as a GS-10, GS-11, GS-12, whatever. They tell us with that job description what level we can pay the individual. Then the normal requirement is we would have to post that job. By posting it means any and every person that is on the civil service list has to have an opportunity to apply for that job, and there is a period

of time in which it has to be kept open before we can even appoint anybody.

Now, fortunately, we were able to convince the OPM that since we were a new agency, they should give us a 2-year waiver on that "posting." So at least administratively we have been able for a short period of time, relatively short period of time, to not have to "post." However, for each of those jobs we still must go to OPM and get their authority and approval.

Now, they are fairly strict in their rules and regulations at what level you can hire people, and most of it is based on how many individuals will that particular individual be managing. If the individual is managing 300 people, okay, he can be a GS-18.

Senator GLENN. We gave you a total of 100, I believe.

Mr. CONWAY. But it is not that so much as it is the individuals we are looking for. We do not want the normal "manager" type that has to justify his or her salary on the basis that he or she has X number of people reporting to them.

Senator GLENN. You were looked at as a specialty group with special tasks and special needs, and it was my impression that that 100 staff was to be the best technical people you could get.

Mr. CONWAY. Yes, sir, and that is what we are looking for.

Senator GLENN. Obviously some of them would be administrative people. Basically we were looking for you to be able to put together a staff of technically competent people and you cannot get that done under present OPM regulations or is it just that it is being delayed?

Mr. CONWAY. We find when we have to try to justify the particular—first off, we are competing with industry and the NRC in getting good technical people.

Senator GLENN. That is a different problem.

Mr. CONWAY. Now, when I tried to set a salary level to bring someone in as a GS-16, 17, and 18—and that is the area we are trying to get these technical people in at—we are being told well, that job description you are looking for, that individual is not managing anybody and normally at a GS-16, 17, 18 you have to have X number of people that you have to manage.

Senator GLENN. They are giving waivers. They are given authority to waive that.

Mr. CONWAY. But we are finding ourselves on each and every individual one that we have to go in and try to justify it to them. Now, in the Atomic Energy Act, it specifies that the NRC is excepted from that recognizing that they need good, technical, highly technical individuals. They do not have to go in and justify those technical jobs to OPM.

Senator GLENN. Do you have a suggested legislative change for us?

Mr. CONWAY. Yes, sir. Senator Glenn, we, like NRC, are under the Atomic Energy Act of 1954, as amended. In that act, in section 161(d), the NRC has a specific exception for that. All we would ask is that our Board, in the same act, be designated to have the exact same authority that the NRC has.

Senator GLENN. Okay. Well, it was intended that you have that 100 people, not to fit some great preconceived pattern of organization that somebody has, but that you have that 100 people. We did

not give you authority for 1,000. We wanted that 100 to be good, tight, technical people.

Mr. CONWAY. Thank you, Senator. This is what we understood your intention was. And, as I say, all we need to do is have one line added to the law giving us that authority.

Senator GLENN. I would be glad to make a call to Connie Newman myself over there if that would help you.

Mr. CONWAY. I appreciate that. We would very much appreciate it if we could have that.

Senator GLENN. You are operating to a very great extent, as I understand it, on private consultants that you are hiring to perform some of this work outside by your inability to do things inside. Is that correct?

Mr. CONWAY. We currently have six staff people, mostly secretarial help. We are utilizing the services and personnel of some other Government agencies to help us, specifically three individuals from the FERC, an independent agency, and we also—however, if we are to do our job and move fast, we have brought in, as I last recall, 10 or 11 experts from the outside.

Senator GLENN. In the Governmental Affairs Committee that I chair and that Senator Levin also is on, Senator Pryor has raised a lot of concerns about, and he has been very valid in things he has worked up, on some of this business of using private consultants to perform technical safety work, and he is particularly concerned about some of the conflict of interest potential you get into. Are any of your consultants also working for the Department of Energy or the contractors? Because in the very technical area you are in, there are not that many real experts in the field, and many of them work for many different masters. Are you having a problem with conflict of interest?

Mr. CONWAY. We are very, very sensitive to that, and as we look for expert help, we are very sensitive to determine whether or not the individuals or the organizations are doing work for the Department of Energy. Obviously, we are not employing those who would have a conflict.

Senator GLENN. Back to Hanford. As was mentioned earlier here, we have been told that some of the instruments in the tanks, in the double walled tanks, in the double shelled tanks, are out. Do we even know for sure what is going on there? As to the measurement instruments that are not even there in some cases, and they do not want to put them in, we have been told, because that would disturb things. The danger of a spark, even trying to put them in, might be a hazard in itself and, as a result of this, it is also my understanding that the Department of Energy even has a moratorium on movement of waste and entry into the double shelled tanks and maintenance of them because of a fear of igniting them. Is it that imminent? And the only other part of that would be is there a risk of criticality at Hanford?

Mr. CONWAY. As Dr. Kouts mentioned, Senator, one of the things we believe we had a hand in bringing to the forefront is this problem in the double walled tanks, and it is one that is getting our immediate attention. It is one that we have met in the last two days, met with the Department of Energy, and it is one that we are actively watching and reviewing.

Senator GLENN. My time is up, but is there any chance of criticality?

Mr. CONWAY. I do not think it a is criticality problem. On the basis of what we have seen to date, I do not see any criticality. It is more a chemical reaction as opposed to a criticality problem. Dr. Kouts, would you wish to say something?

Dr. KOUTS. The criticality problem in the waste tanks is absolutely zero. The chance of other problems is not absolutely zero, and we are definitely watching that.

Senator GLENN. The chance for spewing a lot of stuff all over the place?

Dr. KOUTS. That is, of course, the concern.

Senator GLENN. My time is up. Thank you.

Senator EXON. Thank you, Senator Glenn. Senator Levin, you are recognized for your first round and any opening statement that you care to make.

Senator LEVIN. Thank you, Mr. Chairman. Just my questions of Mr. Conway. Mr. Conway, the Board has oversight over the waste isolation plant, which is the disposal site for the DOD nuclear waste in New Mexico, which I understand is not yet open because of environmental and operational safety questions. Could you tell us how much waste generated by the Department of Defense is scheduled to be disposed of at the WIPP plant?

Mr. CONWAY. I could not give you the answer right off the top of my head. The Board has visited the WIPP location. We have gone down into the mine—if you will—the potash mine that they have there. There is a proposal that the Department of Energy currently has under consideration and is considering to do some experimental work there. And as of now, that has not been approved.

Senator LEVIN. Could you tell me about how many years of waste that plant is going to store? Can you just give us an estimate of years?

Mr. CONWAY. I am sorry. I am not sure how many years it has accumulated or how long they would hold it there, sir.

Senator LEVIN. Not how many years of waste that has accumulated.

Mr. CONWAY. Well, the answer——

Senator LEVIN. Could you handle 10 years of waste, 20 years of waste, 30 years of waste?

Mr. CONWAY. Well, that is a factual matter that I think we can get for you, but I do not have that answer with me.

[The information follows:]

The Final Supplement Environment Impact Statement for the Waste Isolation Pilot Plant issued by the Department of Energy in January 1990 states that the WIPP facility is designed to dispose of approximately 6.2 million cubic feet of contact-handled TRU waste and 250,000 cubic feet of remote-handled TRU waste in the 100 acre mined repository over a 25-year operational life.

Senator LEVIN. I gather that the disposal of waste that is generated by the DOD is an important responsibility of your Board?

Mr. CONWAY. Well, our responsibility to certain specific facilities that are enumerated in the law, our responsibility is to review the work of those facilities and then ensure that there is no unreasonable risk to the public. And if there be some, to make recommenda-

tions to the Secretary on actions he should take. That is our specific responsibility.

Senator LEVIN. But you would make recommendations on actions to be taken at that facility?

Mr. CONWAY. That is correct, as it applies to the public health and safety.

Senator LEVIN. Would it reduce the burden on the Board if there was less nuclear waste generated?

Mr. CONWAY. Well, if there is less nuclear waste generated anywhere in the world, I would say that there would be less work for us to do.

Senator LEVIN. And less nuclear waste generated in the United States.

Mr. CONWAY. Yes, but as of now there is waste in many locations in the United States.

Senator LEVIN. I understand that, but if we reduce the amount of waste that is generated, does that reduce that burden?

Mr. CONWAY. I think absolutely. I think that would follow. One of my colleagues would like to comment on that.

Dr. KOUTS. Senator, I am not sure what the answer to that would be. It would depend upon the actual processes that would be involved or substituted for because the process of generating waste in a sense sometimes cures the problems and if you do not generate waste, you would leave material in forms such that it would have to be protected in other ways, and this could be a larger problem in some instances.

Senator LEVIN. Okay. Just one question on the Savannah River reactor. I gather that it is the desire of the DOD and the Department of Energy to restart one of those reactors by the end of 1990. I know you have testified already, you and your colleagues, a bit on this subject already today, but my question has to do with the timetable. Do you believe that all of the problems at that reactor will be corrected and that at the operations the operators will be adequately trained by the end of 1990?

Mr. CONWAY. Well, specifically on the operators' training, we have selected that as one of the key items, and as Captain Crawford had mentioned earlier, that is one that he is following very, very carefully. As soon as this hearing ends or maybe before it, since he has to catch a plane, he is heading for Savannah River specifically with that point in view. That is one of the things.

Senator LEVIN. I understand that, but maybe someone else could answer this question. Is it your opinion now that these problems will be corrected and that the operators will be trained by the end of 1990?

Mr. CONWAY. This would be one of the things we will be looking at. I cannot tell you right now that that will absolutely happen. We are looking into it and we want to assure ourselves that they are properly trained prior to the operation, and we are giving that top priority right now. But I could not tell you right today that we are prepared to tell you and assure you that that will be taken care of. That is the Department of Energy's responsibility. We have identified it as a top priority for us to watch, and we are going to be watching it very, very carefully.

Senator LEVIN. You will make recommendations on that?

Mr. CONWAY. That is correct, and we already have. We have made recommendations specifically on the operators' training.

Senator LEVIN. I understand, but my question is will you be making a recommendation as to whether or not that should be started by the end of 1990 which is the desire of Department of Defense and Department of Energy?

Mr. CONWAY. If we conclude something has not been properly done or it is our belief that the operation of that plant would constitute an unreasonable risk to the public, we will make our recommendations, yes. And if that means that the plant cannot start on time, we will do it.

Senator LEVIN. Would you be able to let this committee know for the record after that visit is completed as to whether or not it is your opinion at that time whether or not you will recommend the opening, the restart, of that reactor by the end of 1990?

Mr. CONWAY. Okay. At this visit I do not believe that Captain Crawford or any of the experts he will have with him will be in a position to tell you that. We will be looking to see at what point are the operators, in the training program are they currently, and are they on schedule. We will be looking at what kind of schedule have they prepared, how detailed is it, and what are they being trained in. We will follow that along as they proceed towards start-up. But I doubt very much that with this visit we will be able to give you that assurance.

Mr. CRAWFORD. I agree with that. My expectation is that with this visit we will know how much progress they are making. But I doubt that we will be able notwithstanding the fact that—it is a full week's survey—that we will be able to predict whether they will or will not make it by the end of this year.

[The information follows:]

Senator Levin asked whether, after I had visited the Savannah River Site with other experts in late March, it would be possible to give an opinion as to the likelihood of DOE's being able to restart the production reactors there by the end of 1990. During the visit referred to, extensive effort was devoted to the status of measures to train operating crews to the level of competency required to assure protection of public health and safety. Some significant improvements have been made in the management and other key elements of the training effort. However, until more of these planned measures have been completed and tested for their effectiveness, it will not be possible to predict with confidence that re-start can occur in calendar 1990. The Board will, of course, continue to provide oversight of these and other aspects of DOE efforts to ready the Savannah River reactors for re-start and make additional recommendations to the Secretary of Energy as appropriate.

Senator LEVIN. My last question is the standard that you use relative to your recommendation, you just used the words unreasonable risk to the public. Is that the statutory standard?

Mr. CONWAY. The statutory standard, as I recall, is to ensure that the public is being adequately protected, and the other terminology I use is in the report of this committee.

Senator LEVIN. Could you give assurance that you would not recommend the restart unless you were confident that it was completely safe to do so?

Mr. CONWAY. I do not see us making necessarily the recommendation that they restart. What we will be doing is making recommendations as the law requires us to do where we see evidence that there could constitute a risk, an unreasonable risk. We have

identified specific areas that we will be pinpointing as we do these reviews, and we will continue to look in those areas. And, if necessary, extend into other areas as we proceed as this procedure moves ahead. But, as I say, it is the last part of this year before the plant is scheduled to go on line, and we are going to follow it very, very closely as our top priority.

Senator LEVIN. Thank you, Mr. Chairman.

Senator EXON. There is a vote on, and we are halfway through the vote. The Chairman was hopeful that we could finish up. I have no further questions at this time. Did you wish another round, Senator Glenn?

Senator GLENN. No, thank you, Mr. Chairman.

Senator EXON. I would say that Senator Glenn, Senator Levin, myself and others may have additional questions for the record. We would appreciate your giving your responses as promptly as possible, gentlemen.

Thank you for being here. It has been a very informative hearing. Thank you for your good work. We are adjourned.

[Questions for the record with answers supplied follow:]

QUESTIONS SUBMITTED BY SENATOR J. JAMES EXON

DOE FUNDING

Senator EXON. The committee has noted that both Congress and the executive branch must provide sufficient funds to modernize the Department of Energy complex and to ensure adequate protection of the public health and safety. At your nomination hearing you also identified funding as one of the Department of Energy's major problems. Has the Department of Energy identified to you or have you identified any areas where the public health and safety are at risk or necessary work is not being done, due to lack of funding?

Mr. CONWAY. Our review priorities have focused on selected Department of Energy (DOE) defense nuclear facilities that DOE considers critical to its mission. These reviews encompass the Savannah River Reactors, the Rocky Flats Plant, and the Waste Isolation Pilot Plant. We are also directing our attention to a potential waste storage safety problem at the Hanford Site. During these reviews it has become apparent to the Board that timely modernization of many DOE defense nuclear facilities, such as Building 771 at Rocky Flats, would provide an important contribution to public health and safety. However, we have not found any indication to date that the public health and safety is at risk due to any current lack of funding for the modernization program, nor has the DOE advised us that funding is a concern at any of these facilities. That is not to say, however, that the DOE is content with the level of funding for its modernization program.

TECHNICAL CONTRACTS

Senator EXON. Section 313 of the Atomic Energy Act allows the Board to use outside experts and consultants on a temporary basis. What functions are contractors currently performing? What are the costs to date? What assurances does the Board have that there are no conflicts of interest with Department of Energy contractors? Does the Board have any formalized procedures in place to prevent conflicts of interest?

Mr. CONWAY. The Board has 10 technical support contracts in place. These contracts are for the services of technical experts in areas such as seismic engineering; thermal-hydraulics; piping integrity; probabilistic risk assessment; nuclear safety standards; training and qualifications of operations personnel; and chemical engineering. Total fiscal year 1990 obligations to date for technical support contracts are $834,584. Each contractor that the Board employs is carefully screened for conflict of interest. Each contract issued by the Board contains language prohibiting the contractor from engaging in simultaneous work with the DOE or DOE contractors.

DNFSB STAFF

Senator EXON. Section 313 of the Atomic Energy Act allows the Board to use the employees of other Federal agencies or their contractors. Has the Board utilized this provision and the services of other agencies?

Mr. CONWAY. The Board currently has three employees on reimbursable detail from two Federal agencies, the U.S. Department of the Interior and the independent agency—the Federal Energy Regulatory Commission. The Board also has an Interagency Agreement with the National Science Foundation for assistance in the preparation of technical contracts. This agreement will relieve much of the administrative burden associated with the many standard clauses and phrases necessary for technical contracts.

NRC AND ACRS ADVICE

Senator EXON. Section 313 of the Atomic Energy Act allows the Board to call upon the Nuclear Regulatory Commission staff to provide advice and recommendations as well as the Advisory Committee on Reactor Safeguards. Has the Board utilized these resources? Does it have plans to do so?

Mr. CONWAY. On December 20, 1989, the Board met with Adm. Kenneth Carr, Chairman of the Nuclear Regulatory Commission and members of his staff, to explore areas in which the NRC might assist the Board in its work. It was agreed that the Board in implementing required Federal drug plans could avail itself of the NRC program on a reimbursable basis.

The Board also met with the ACRS on February 8, 1990. The Board may decide to request assistance from both the NRC and the ACRS on a case specific basis, but at this date, has not requested such assistance.

WASTE ISOLATION PILOT PLANT

Senator EXON. What involvement will the Board have with operation of the Waste Isolation Pilot Plant?

Mr. CONWAY. The Board has made an initial familiarization visit to the WIPP facility. During this visit, presentations were made by senior DOE and contractor personnel relating to the history of the project and the current issues facing DOE management including the numerous experiments for characterizing the expected performance of the facility. As part of its recommendations to the Secretary on standards, the Board recommended that DOE identify the specific standards which it considers apply to the design, construction, operation, and decommissioning of WIPP, provide its view on their adequacy for protecting public health and safety, and determine the extent to which these standards are implemented. The Board has sent one of its technical staff members to the WIPP site to gather information and report first hand to the Board on progress at the site. Several follow-up trips to the WIPP by the Board or other technical staff are being arranged. These visits are scheduled to enable the Board to make any necessary recommendations within the time frame that the WIPP will be ready to receive waste for the test-phase operation.

AHEARNE COMMITTEE

Senator EXON. What has your relationship been with the Advisory Committee on Nuclear Facility Safety, also known as the Ahearne Committee? Has the transition been smooth? Has there been any overlap of functions?

Mr. CONWAY. The Board has had a cooperative relationship with the Ahearne Committee on Nuclear Facility Safety. We have been provided with copies of its assessments and other documents such as transcripts of its deliberations. We do not see that there has been overlap of functions, given the fundamentally different oversight roles that the Ahearne Committee and the Board have. It is to be noted that the Board and the Ahearne Committee have fundamentally different roles in the oversight process. The role and functions of the Committee are as the Secretary determines them to be. The role and functions of the Board are as determined by statute. Thus, they are not mutually interchangeable. Within this context the Board members feel that the transition toward mounting Board external oversight activities has been a smooth one.

STAFFING CEILING

Senator EXON. The Board is limited to a staffing ceiling of the equivalent of 100 full-time positions. You have described some of your current staffing problems in

reaching that goal. How many full time employees does the Board have and what are their duties? How many hires are in progress?

Mr. CONWAY. At this time, the Board has hired six full-time employees, and five new employees report for duty in the next 4 weeks. In addition, the Board has placed advertisements for technical positions in major newspapers and journals and has received over 1,000 responses. Currently, the Board has posted Senior Executive Service vacancy announcements for the Technical Operations Manager and the General Counsel.

[Whereupon, at 3:50 p.m., the committee adjourned, subject to the call of the Chair.]

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